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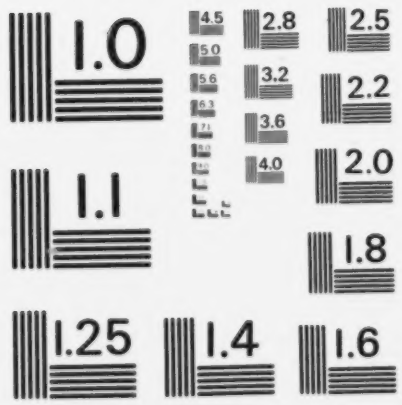

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Design for All Americans. A Report of the National Commission on Architectural Barriers to Rehabilitation of the Handicapped.

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The need for environmental improvement to benefit the handicapped and the elderly is stated and the following are detailed: priorities for action, the lack of public awareness, progress to date, and reasons why the problem of architectural barriers persists. Listings are provided of the Commission's recommendations for legislation, research and demonstrations, education and information, and other areas. Appendixes name the witnesses before the Commission and members of the federal government liaison group; report on federal, state, and local efforts to eliminate architectural barriers; compare building codes with the American Standards Association Specifications; relate the report of the American Institute of Architects, Potomac Valley Chapter, on barrier free architecture; provide a checklist of publications relating to architectural planning for the physically handicapped; and cite selected references on architectural planning. The transmittal letter and roster of Commission members are included. (JD)

DESIGN FOR ALL AMERICANS

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Rehabilitation Services Administration
Social and Rehabilitation Service
Department of Health, Education, and Welfare
December, 1967

JAN 23 1969

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A Report of the
National Commission on
Architectural Barriers
to Rehabilitation of
the Handicapped

DESIGN FOR ALL AMERICANS

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Dear Mr. Secretary:

The National Commission on Architectural Barriers which you appointed in April 1966, has completed its report in accordance with its legislative mandate and your charge:

"To determine how and to what extent architectural barriers impede access to or use of facilities in buildings of all types by the handicapped;

"To determine what is being done to eliminate such barriers from existing buildings and to prevent their incorporation into buildings constructed in the future;

"To prepare plans and proposals to achieve the goal of ready access to and full use of facilities in buildings of all types."

The conclusions and recommendations earlier presented in an interim report in connection with Federal legislation have been incorporated in this report in order to present a complete statement of the Commission's work and recommendations.

In pursuing its challenging assignment, the Commission has received full support and cooperation from the Rehabilitation Services Administration and other units of the Department of Health, Education, and Welfare and from all other Federal agencies it has called upon. Particularly notable has been the help of the General Services Administration and the President's Committee on Employment of the Handicapped.

The information and experience of voluntary groups (especially those organized specifically by or for the handicapped and aged), several universities, various professional organizations, and State and local government officials have also aided the Commission in many ways.

The Commission's major activities in developing this report include:

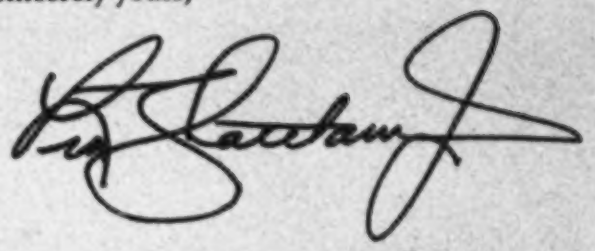
- Nine 2-day meetings, held in several sections of the country, to get first hand knowledge of current problems and programs.
- Hearings, addressed by 44 experts on different facets of the problem to obtain a cross section of national experience and opinion.
- Arrangements for special studies—including a comprehensive study of State and local programs by the National League of Cities and a study of architects' attitudes and actions by the American Institute of Architects—to evaluate the extent of the problem and the additional measures needed to cope with it.
- Arrangements for a nationwide public opinion poll.
- Consultation with a great many Federal, State, and local officials.
- Participation in congressional hearings, held by subcommittees of the House and Senate Committees on Public Works, on Federal legislation to eliminate barriers in public buildings.

From the wealth of data and constructive suggestions made available to the Commission in these and other ways, we have prepared this report.

The recommendations which the Commission considers merit highest priority for actions are summarized on the first pages. These and other recommendations are discussed in more detail in the recommendations section of the report under three broad groupings: legislation, research and demonstrations; education and information. A variety of recommendations which do not fall within these three groupings constitute the fourth part of the recommendations section.

At your convenience, we shall be glad to discuss the report with you and Miss Mary E. Switzer, Administrator of the Social and Rehabilitation Service, whose cooperation has been of inestimable value throughout the Commission's study.

Sincerely yours,



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INTRODUCTION

In 1957, Hugo Deffner of Oklahoma City was named "Handicapped American of the Year" for his one-man crusade against the unnecessary barriers that prevented him from moving freely about in his community. But two Marines had to carry him to the stage of the Federal building where he was to receive his award!

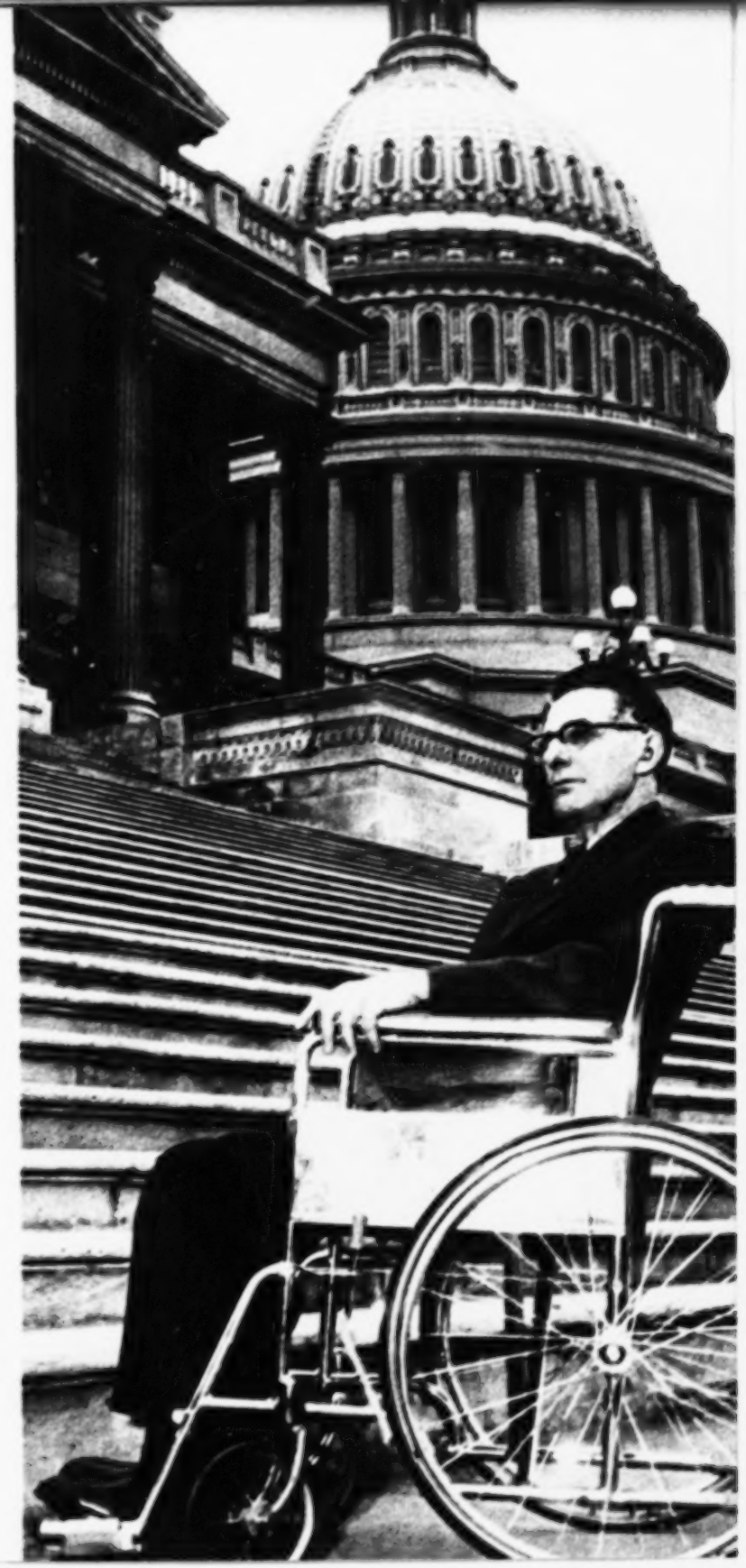
During the decade that has elapsed since then, the pressures for creating a more livable environment have mounted. Not only the handicapped but all Americans are demanding environmental improvement. Air and water pollution, slum housing, unsafe streets and highways have become the themes of countless conferences. The creation of model cities has become a national goal, backed by Federal legislation and funds. Environmental improvement is indeed "an idea whose time has come."

A vital part of such improvement must be for the benefit of the growing proportion of handicapped and elderly people in our population. Two facts underscore the need:

- More buildings, according to the American Institute of Architects, will be built in the United States between now and the year 2000 than were built here in the nearly five centuries since Columbus discovered America.
- Due to medical and rehabilitation advances, the number of aged and disabled people in the population is steadily increasing and fewer of them are housebound.

Inevitably, there will be more handicapped people and they will need more buildings to use in common with everyone else. Therefore, now is the time to influence the decisionmakers who plan for, design, finance, and control construction of the buildings, recreational areas, and equipment that will be used in the years ahead. Now is the time for national decision so that our schools, libraries, hospitals, art galleries, theaters, stadiums, dormitories, residences, and transportation systems will be accessible to all.

Early action on the recommendations in this report is essential if the objective of usable facilities for all the people is to be realized in the near future. The sustained interest of national and local leaders, including legislators, public administrators, business leaders, architects, and educators is essential to a successful effort.



Hugo Deffner, Pioneer Against Architectural Barriers, Could Not Enter the Nation's Capitol Ten Years Ago

PRIORITIES FOR ACTION

The modern man-made environment is designed for the young and healthy. Yet almost everyone, sooner or later, is handicapped by a chronic or temporary disability or by the infirmities of old age. By designing for the ideal human body, we bar real people from getting an education, earning a living, becoming a part of active community life. More than 20 million Americans are built *out* of normal living by unnecessary barriers: a stairway, a too-narrow door, a too-high telephone. At the right moment, their needs were overlooked. In time, the last vestiges of such thoughtlessness will disappear from the American scene. To speed the Nation toward that goal, the Commission offers a series of recommendations in this report. Those of major importance for immediate action are:

1. Enactment of Federal legislation requiring that all new public buildings and facilities which are intended for use by the public must be designed to accommodate the elderly and the handicapped if any Federal funds are used in their construction.

2. Issuance of an Executive order to apply accessibility standards to new construction and directing all Federal agencies to plan and budget for feasible changes in their existing buildings and facilities.

3. Enactment or revision of State legislation to require that State and local buildings constructed with public funds meet accessibility standards and to include strong enforcement provisions.

4. Revision of all building codes so that industries, shops, and other privately owned structures used by the public will be built for accessibility in the future and so that, when existing buildings are renovated, feasible improvements in accessibility will be made.

5. Assignment of responsibility and resources to specific units of Federal, State, and local governments to administer the accessibility legislation, to conduct and/or support research and demonstrations, and to work with voluntary, professional, business and industrial organizations to the end that all buildings and facilities used by the people of every community will be readily accessible to elderly and handicapped people.

6. Expansion of public and privately supported education and information programs so that no longer, merely through thoughtlessness, will millions of citizens be unable to use buildings, parks, and other facilities.

THE SENSITIVITY GAP

A recent public opinion poll revealed that 64 percent of the American people had not thought enough about how the handicapped manage to get around in their communities to realize that a serious problem exists. They were unaware that:

- The greatest single obstacle to employment for the handicapped is the physical design of the buildings and facilities they must use.
- One out of 10 persons has some disability which prevents him from using buildings and facilities designed only for the physically fit. Among this one-tenth of the population are 2 million children with orthopedic handicaps; millions of adults who are enfeebled by age or who have heart disease, arthritis, deafness, blindness, and other chronic disabilities. Over and beyond the handicapped one-tenth of the Nation are the millions temporarily disabled by accidents who could return to school or work sooner if buildings were designed for accessibility.
- In every community, virtually all of the buildings and facilities most commonly used by the public have features that bar the handicapped.
- The most common causes of inaccessibility are due entirely to failure to think of the needs of the handicapped at the design and planning stage.

They include:

Steps and curbs
Inaccessible elevators
Steep and narrow walks; gratings in walkways
Doors that are too narrow, revolve, or are hard to open
Lack of parking spaces reserved for the handicapped and designed for their use
Lack of accommodations for wheelchairs in theaters, stadiums, and other public gathering places
Too-narrow aisles in cafeterias, restaurants, libraries, auditoriums, etc.
Too-small public toilet stalls and telephone booths
Too-high telephones, drinking fountains, vending machines, light switches, fire alarms

- New facilities built and equipped to accommodate the handicapped cost little or no more to construct than buildings designed only for the able bodied.
- Many old buildings could have some of their barriers removed at nominal cost.
- A fresh reservoir of competent employees can often be tapped or new customers obtained by adding just a few accessibility features such as:

Hand rails
A ground-level main entrance or ramp
Steps that are rounded instead of squared at the edges
Doors that open automatically
Raised letters and numbers on doors and in elevators so that the blind can read them
Danger signals equipped with light as well as sound so that the deaf will be warned

An open booth with a low-placed telephone
One or more wide toilet stalls with grab rails
Nonslip flooring

- Many improvements made to accommodate the handicapped also add to the safety and convenience of the able bodied.
- Any building can be made accessible to the handicapped with little or no loss of space and without detracting from its usefulness for the able bodied.

The Rising Cost of Thoughtlessness

In both human and dollar terms, this Nation will pay an ever-increasing price if it continues to create an environment in which only the able bodied can thrive.

Every year, 100,000 babies are added to the population who are born with the kinds of defects that will require them to use crutches, braces, or wheelchairs all their lives. In the past, fewer such babies lived. For those who did, and for other handicapped children, special and costly institutions, schools, and classrooms were constructed. The University of Illinois has found that 60 percent of its handicapped students attended special grade and high schools or grew up in institutions for the handicapped.

The inhumane and costly practice of treating children with handicaps as an isolated group will have to be expanded unless accessibility is made an integral part of all design.

Every year, the traffic toll mounts. It is estimated that at the present time there are about 125,000 paraplegics in the United States. During the next 10 years there will be increasing numbers of traffic accident victims who become permanently disabled.

The number of war veterans who must use wheelchairs is also increasing, both because the nature of the war in Vietnam—with its landmines and boobytraps—results in proportionately more crippling wounds and because medical advances enable more men to live. In World War I, only 400 men with wounds that paralyzed them from the waist down survived at all, and 90 percent of them died before they reached home. In World War II, 2,000 paraplegics lived and 1,700 of them are alive today.

If these and other seriously disabled Americans are to have a real future, the wheelchair—not the athlete's leg—must become the gauge of accessibility.

In spite of the half billion tax dollars invested annually in the vocational rehabilitation of the disabled, hundreds of disabled men and women find their path to independence blocked by man-made barriers. Their arduous efforts to qualify for work were in vain and the aid they received only added to their frustration.

Every day, 1,000 Americans pass their 65th birthday and enter the period when strokes, arthritis, and other crippling impairments are most likely to occur.

No rehabilitation gains that can be anticipated in the foreseeable future will be sufficient to prevent the size of the accessibility problem from mounting.

Because of the obstacles we have put in their way, the handicapped today are a hidden population. Only the most intrepid risk the dangers and suffer the discomforts and humiliations they encounter when they try to live a normal, productive life. Most of the handicapped are out of sight. Will we continue to put them out of mind—to forget about the child with cerebral palsy, the housewife with muscular distrophy, the student with multiple sclerosis, the worker who had to retire because of a stroke, the amputee from Vietnam?

These people live among us. They have hopes, talents, ambitions like the rest of us. Their number is growing every day.

PROGRESS TO DATE

Considering that work on the "architectural barriers" problem, as it is called by the growing band of citizens who are concerned about it, began only a few years ago, impressive progress has been made.

Guide for Public Buildings

In 1958, just a year after Hugo Deffner received his award for pioneering in this field, an ad hoc group of the President's Committee on Employment of the Handicapped, with the help of the Veterans' Administration, drafted a guide on facilities needed to enable the handicapped to enter and use public buildings. The Labor Department immediately sponsored the guide and sent printed copies to all State employment agencies. This marked the beginning of the nationwide drive to remove architectural barriers.

Standards for Accessibility

The most significant advance of all began less than a year later. A special committee of the United States of America Standards Institute,[1] sponsored by the President's Committee on Employment of the Handicapped and the National Easter Seal Society for Crippled Children and Adults, called a national conference at which representatives of professional and trade associations and other organizations concerned with the problem met with Federal officials. Out of this conference came the plan to develop a set of specifications that would assure accessibility to the handicapped.

By 1961, this task was completed. "Specifications for Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped" was issued by the United States of America Standards Institute. It was immediately approved by the 75 organizations that had been represented at the planning conference. The document spelled out, in precise and practical terms, the minimal features required to remove the major barriers that prevent many persons from using buildings and facilities. The Commission, in common with other authorities who have studied and used the standard, has found that compliance with this standard is neither excessively demanding nor costly.

Among the many groups that promptly endorsed its use were the National Council of Churches, the American Public Health Association, the Society of Industrial Realtors, the AFL–CIO, the International Association of Government Labor Officials, and the Associated General Contractors of America.

Tens of thousands of copies of the standard were distributed and, with this practical tool at hand, both official and voluntary efforts were accelerated.

Laws, Ordinances, and Other Official Actions

Since the issuance of the standard, 44 States have taken some kind of formal or legal action requiring that public buildings (and in a few cases private ones as well) be made accessible to the public. Action to eliminate architectural barriers is also reported by 95 cities with populations of 50,000 and over and by 42 metropolitan counties.

John Loengard, Life Magazine

[1] Then called the American Standards Association.

Key Federal agencies, such as the General Services Administration, Post Office Department, Veterans' Administration, Department of Defense, and the Department of Health, Education, and Welfare have voluntarily adopted many provisions of the standard and are asking agencies that receive grants from them to do so.

Volunteer Efforts

Community interest in the standard has been sparked by State and local chapters of many civic groups including Kiwanis, Rotary, Civitans, Chambers of Commerce and Jaycees, Junior League, Altrusa, Federation of Women's Clubs, Junior Women's Clubs, and numerous veterans, union, and church groups.

Community Inventory Project

Another spur to community action was the project called "Community Inventory of Architectural Barriers to the Handicapped," jointly launched, in 1962, by the National Easter Seal Society for Crippled Children and Adults and the President's Committee on Employment of the Handicapped. Through this project, over 5,000 buildings in 28 States and the District of Columbia were surveyed. Architectural barriers committees were organized in at least 30 States and 48 communities.

Directories for the Handicapped

As a byproduct of the inventory project, directories for the handicapped began to appear. They describe architectural features of local buildings and facilities so that handicapped people will know just what obstacles they will encounter. To date, 30 communities have already published such directories, more than a dozen are known to be working on them, and at least 25 more are planning to do so. The Federal Government has recently published such a guide for national parks and monuments, and some hotel and motel chains and organizations issue such directories for handicapped travelers.

Action by Universities and Colleges

A few years ago, not a single university or college in the Nation was completely accessible to the handicapped. Today, there are at least 12 institutions of higher learning where a handicapped student can move freely about the campus and in most of the buildings. The Universities of Illinois and Missouri are outstanding examples.

Impact Upon Communities

The cities of Urbana and Champaign, both of which are adjacent to the University of Illinois, have followed its example. Most of their churches, motels, movies, bowling alleys, and restaurants are now accessible to the handicapped.

Nassau County, N.Y., has also made exceptional progress. Since 1963, it has put ramps, handrails, and other accessibility features in many of the existing buildings used by the public and has required accessibility for all new county buildings. Its new supreme court building and museum of natural history are fully equipped to be used by people in wheelchairs.

Communities that get Federal funds specifically for housing for the elderly and the handicapped are now required to observe the design standards which have been issued by the Department of Housing and Urban Development. These standards include accessibility features.

Transportation Improved

Although transportation continues to be the most serious problem encountered by the disabled, some progress has been made. The airlines have recently established specific criteria for the carriage of the handicapped. To an increasing extent, it is becoming possible for a wheelchair passenger to roll directly from the airport into the plane. In the airports themselves, vestibules and revolving doors are disappearing and being replaced by air curtains and vacuum systems or automatic door equipment.

Taxi companies in some cities provide cabs with ramps. Others offer a regular pickup service at specified times, with drivers trained to help their passengers and handle crutches and wheelchairs. Two major rent-a-car firms now offer hand controlled cars at no extra charge in a few large cities.

In the planning of the future subway system which will serve the Washington, D.C., area, Congress has indicated that it expects the subway to accommodate all, including the aged and disabled.

Plans for the high speed ground transportation project, which will connect Boston, New York, and Washington by rapid rail, include such features as: level station platforms to eliminate steps to trains, smooth stops and starts, and luggage carts that the handicapped can handle.

The Federal Highway Administration is including the use of ramps for pedestrian overpasses in its urban design policy.

Educational Activities

In 1966, the State of Hawaii pioneered in holding a statewide conference. Sponsored by the Governor and the State House of Representatives, it brought State planners, architects, and financiers together with disabled people and leaders of rehabilitation and other professional organizations. Architectural barriers was the sole theme of the conference.

Other conferences that have dealt exclusively with this problem include an institute sponsored by the National Easter Seal Society for Crippled Children and Adults in Chicago in 1965, a seminar sponsored by the State University of New York Construction Fund in New York City in 1966, and, in November 1967, a conference in Washington, D.C., sponsored by the American Institute of Architects and designed as a model to be used by the Institute's local chapters throughout the Nation.

Filmstrips, slides, and publications, for both special and general publics, have become more and more numerous. A film, "Sound the Trumpets," has been produced for the general public by the Minnesota Society for Crippled Children and Adults. A how-to-do-it illustrated manual, newly produced by the State University of New York Construction Fund, is a guide for the construction of college and university facilities. How-to-do-it kits on organizing community facilities were issued by the National Easter Seal Society for Crippled Children and Adults in 1962 and 1967.

Cost Studies

The National League of Cities has recently completed a cost study of three new buildings—a civic center, a city hall, and a hotel. Comparing what was spent to what would have been spent to make these buildings accessible to the handicapped, the League found that the increased cost would have been less than one-tenth of 1 percent.

The League also made cost estimates of seven hypothetical buildings, each representing a type commonly being built today. They figured that the extra cost of building them barrier-free would be less than one-half of 1 percent.

Both cost studies were arranged for by the Commission to obtain data for this report.

Research Projects

Space research offers great promise for innovations that will benefit the handicapped. The Social and Rehabilitation Service of HEW has already conferred with the National Aeronautics and Space Administration on plans to screen inventions for devices or ideas that show promise. For example, it may be possible to develop a "TV lens eye," a radar device which blind people can wear on their heads to enable them to distinguish lines and mass and thus get about more easily.

The U.S. Department of Transportation has recently announced a comprehensive research program to produce guidelines for transportation planners and operators which would assure that all transportation vehicles, terminals, and the entire transportation system of the future will be designed with the needs of the aged and disabled in mind.

The Department of Housing and Urban Development has already signed a contract with the National Academy of Science to study the potentials for making nonrail mass transit and other urban transportation systems more accessible.

Federal Grants

Not only by the support of research, but also by supporting a broad range of educational and training programs, the Federal Government has been placing increasing emphasis on this phase of work for the handicapped. The major Federal agency involved is the Rehabilitation Services Administration of the Social and Rehabilitation Service of HEW (which includes the former Vocational Rehabilitation Administration). This agency has invested about $1 million in the past 10 years on the accessibility problem. Its grants helped to make possible not only the development of the standard specifications, but also most of the educational, community organization, and other activities cited above.

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WHY THE PROBLEM PERSISTS

Despite achievements, and the hard work of thousands of citizens which made them possible, the handicapped are still barred from most of the places they want to go, and the majority of Americans remain unaware of their problem.

During field visits, the Commission found that the very places most used by the public were often the ones least accessible to the aged and handicapped. In every community, daily tragedies occur: A handicapped child, a disabled war veteran, an elderly couple—all frustrated in their efforts to study, to work, to enjoy their leisure, by sheer thoughtlessness.

Obviously, there is no rational opposition to measures that can help millions and usually cost little or nothing. To explain the continued widespread existence of the problem, one must seek other causes. From the special studies it requested, as well as from interviews, observation, and personal experience, the Commission found these weaknesses in the present effort:

Millions Unreached

Both voluntary and official action is likely to continue to be minimal until more people, including those directly involved in building construction and equipment manufacturing, have the problem brought to their attention. Among the uninformed are—

Architects

As a part of its special study of the problem, the National League of Cities sent a questionnaire to 2,975 architects, 10 percent of all the Nation's architects. Of the 709 who replied, only 251 said that they knew about the standard specifications for making buildings accessible. Although 511 architects said that they had made a conscious effort, in some of the buildings they designed, to make them accessible to the aged and handicapped, only 28 percent of those who did so used the scientifically tested standard issued by the United States of American Standards Institute.

No school of architecture today gives special or continuing attention to the problem of accessibility. The University of Illinois, however, has plans to construct a model which will contain all the most common obstacles encountered by the handicapped and to require architectural students to go through this model in a wheelchair. But even this most elementary effort to make future architects barrier conscious is still in the proposal state.

Manufacturers and Suppliers of Building Materials

The national organizations of the seven major trade groups were questioned. None had established any policy about meeting the standard and only three were familiar with it. The National Elevator Manufacturing Industry, the Plumbing Manufacturers Association, and the National Sash & Door Jobbers Association all thought that their members' standard products would have to be altered to make them usable by the handicapped.

Building Code Groups

Most State and local building codes are based on one of four national model building codes.

(Differences in the four model codes reflect mainly the differing requirements necessitated by climatic variations.) The major goals of all four codes are fire safety and structural stability. None makes any reference to architectural barriers.

Replies to inquiries sent to the four codemaking groups indicate that they are not well informed about the problem. For example, although slips and falls account for the bulk of insurance claims for accidents in buildings (accidents that could be greatly reduced by compliance with the standard specifications), one group replied that accessibility regulations would not affect their interest *"if it did not interfere with recognized standards of safety."* Another replied: "While it is *conceivable* that the requirements involving eliminating architectural barriers . . . have a relation to safety, the legality of such requirements is questionable." [Italics added.]

The General Public

Even people who are planning construction are often unware of the benefits (added safety, more customers, wider choice of employees) of making their new or remodeled facility fully accessible. Failure of their clients to request this goal was the number-one reason architects gave for not designing barrier-free buildings.

Lack of public interest was also the number one reason public officials gave for failure to develop public programs. When questioned by the National League of Cities, 40 percent of the city officials and 30 percent of the county officials reported that they saw no need for a program. No one had ever discussed the issue with them.

A nationwide public opinion poll revealed that not only were few citizens working on this problem, but 89 percent did not even know whether any effort was being made by anyone in their communities. Yet when citizens do show organized concern, they usually get action. The League of Cities study revealed that in only one of the cities that had no program was there a citizens' committee active on the problem.

Voluntary Action Not Enough

Even with an informed and concerned citizenry, however, change cannot be achieved by voluntary efforts alone. Education and persuasion must be reinforced with legislative action. This is demonstrated by the experience of the Federal Government in attempting to make more accessible its own buildings and those it helps to finance through construction grants.

All Federal officials responsible for construction and construction grants have been alerted to the problem. All have received the standard issued by the United States of America Standards Institute. Nevertheless, new buildings continue to be constructed with unnecessary barriers and too many renovations of existing buildings leave many barriers untouched.

The Department of Defense is still bound by a policy that prohibits elevators in new buildings that are less than four stories high unless they are to be used for medical or other special purposes.

The Post Office Department reports that all it has been able to do to make post offices more convenient for the aged and handicapped is to insist upon ramped or level entrances and toilet facilities.

The Department of Health, Education, and Welfare reports that some of its construction grants are still being used for buildings that are not completely accessible. Only in programs where authorization to require accessibility is a part of the grant legislation has real progress been made.

The General Services Administration, which is responsible for the construction, repair, and renovation of some 5,000 federally owned buildings, has tried to remove barriers, but, lacking the support of law, its progress has been slow. During the 18-month period from January 1966 through June 1967, only 71 Federal buildings had major renovations, including removal of barriers. Yet, when it is feasible at all to remove barriers, GSA finds that the cost of doing so is minimal—1 percent or less of renovation costs. Nevertheless, almost all of the older Federal buildings have features that prevent all citizens from using them.

GSA also reports inability to get barriers removed from the growing number of privately owned buildings it leases for Government use.

If persuasion alone were enough, all Federal buildings and facilities would be accessible to all who want to use them. They are not.

State Laws Lack Teeth

Laws are effective, however, only when they are specific and strong. Some of the legislative action taken to date is both vague and weak. Although 44 State governments have now passed laws or resolutions or taken other official action which put them on record as being sympathetic to the problems of the aged and handicapped, there is no real reason why anyone needs to know about or pay attention to these official actions.

An analysis of State action, undertaken by the National League of Cities at the request of the Commission, shows that:

- Only six States spell out what they mean by accessibility in terms of the standard specifications, and three of these States reduce their effectiveness by wide open escape clauses such as "insofar as possible and reasonable," "to the extent deemed feasible."
- Only nine States have clearcut enforcement provisions with responsibility assigned to a single agency. However, none of these States is among the six that make specific requirements based on the standard specifications. Apparently, no State has a strong law and strong enforcement provisions.
- In three States the law applies only to State-owned buildings. Almost all of the laws apply only to new, publicly owned buildings. Only three States cover some (but not all) new, privately constructed buildings.
- Only four States have modified State building codes by including some accessibility requirements.

Local Action Minimal

The League of Cities study also covered city and county requirements. It revealed that:

- In very few of the cities and metropolitan counties (the places where the accessibility problem is most acute) have elderly and handicapped people found any improvement at all.
- Of the 95 cities with populations of 50,000 or more that reported some type of program, 39 have failed to take any official action. And in 284 cities of this size, there is no program at all. Similarly, while 42 metropolitan counties reported a program, 230 of the Nation's most populous counties have no program.
- Only nine cities and five counties have adopted or amended building codes or ordinances to take account of the standard specifications. Most of the local official actions are mere resolutions or statements passed by City or County Councils and refer only to new, publicly owned buildings.

Transportation Problem Neglected

Although lack of usable transportation is the most serious problem encountered by the aged and handicapped, it has received almost no attention. There are no standard specifications that apply to it. This Commission was not asked to make recommendations relating to it. There are no Federal, State, or local requirements for accessibility that public transportation systems must meet.

The result can readily be seen in the transportation system of any community. The steps from street curb to bus or streetcar entrance are often so high that children as well as the aged have difficulty and the disabled usually cannot cope with them at all. The aisles inside are too narrow for a person on crutches, let alone a wheelchair passenger, to navigate. Subway entrances lead to long flights of stairs with turnstiles barring the way to the trains. Sudden stops and starts—common to all types of public transportation—are hazardous for everyone but most seriously so for the disabled.

Standard Specifications Incomplete

While the standard issued by the United States of America Standards Institute represents a great

step forward, it is incomplete. It does not cover residential housing or transportation; it does not deal with all of the major barriers; it does not spell out just what facilities are covered and to what extent its specifications should be followed.

Many Facts Missing

Much of the data essential for sound planning has never been gathered. There are no current and reliable data about the number and location of people for whom architectural barriers present a problem. We do not know how much building owners would save in insurance costs if buildings met standard specifications. We do not know what the tax bill is for the support of people who are unemployed only because buildings and facilities are inaccessible to them. We do not know the size of the investment in special schools, institutions, dwellings that would be unnecessary if a few basic specifications were applied to all construction. Nor do we know the added personnel costs of helping people who could be self-reliant if buildings and facilities were more usable.

In brief, there has been so little serious study and fact gathering that all current estimates of the extent and seriousness of the problem must inevitably understate it.

The Task Ahead

Relating past progress to immediate and future needs, the best that can be said is that we now know what needs to be done and we have many of the tools to do it. The recommendations which follow show how important segments of the task can be completed with reasonable rapidity.

THE COMMISSION'S RECOMMENDATIONS

I. Legislation

Federal Legislation

As a major source of support for the construction and renovation, not only of Federal buildings, but also of schools, hospitals, libraries, and other facilities in a great many communities, the Federal Government can make a tremendous impact on the problem by its own actions. This, in turn, will stimulate demand that similar action be taken in the construction and renovation of buildings that do not receive Federal financial support.

Therefore, the Commission recommends enactment of a Federal law or laws which would:

- Require that all new facilities intended for use by the public which are leased or owned by the Federal Government be designed without barriers; require that barriers be removed from existing Federal buildings that are used by the public to the fullest extent feasible.
- Require that non-Federal organizations which receive Federal funds for construction, either directly or through Federal grants to States, meet the same design and safety requirements that apply to federally owned or leased facilities.
- Make the Department of Health, Education, and Welfare responsible for the establishment and promulgation of Government-wide policies, procedures, and specifications, and their enforcement, to achieve at least minimum standards of accessibility and use in public buildings. In cooperation with the General Services Administration, HEW should be responsible for ascertaining the compliance of all Federal agencies and departments to Federal accessibility laws. Congress should keep a legislative watch over progress by assigning responsibility to one of its existing joint or separate committees. This committee should call for a periodic report on progress and should review programs and budgets to assure that prompt and adequate action is being taken.
- Authorize the Department of Health, Education, and Welfare, in cooperation with other public and non-profit organizations, to undertake, sponsor, and/or help to finance research, demonstrations, training, and educational activities.

  The authorization should specifically provide for the establishment of a Technical Assistance and Demonstration Office. This office would collect and disseminate research findings; develop data and case studies to show university administrators, businessmen, and other owner groups the advantages of eliminating barriers; undertake or stimulate research and demonstrations on standards, particularly those relating to residential housing and the renovation of existing buildings—the areas where new insight is most needed.

This office would also assist other Federal agencies in developing appropriate means to comply with Federal accessibility legislation. It would work with comparable State agencies and with all appropriate National, State, and local groups, encouraging their support, commitment, and effective activity. In doing so, it would issue guidelines and informational, educational, and other materials which could be incorporated into activities of National, State, and local voluntary and official organizations.

A high priority of this office would be to work with key groups that have a specific role to play, such as associations of architects, schools of architecture and engineering, professional groups concerned with building code writing and building code management to acquaint them with the problem and to help them develop curricula, guides, and with provisions relating to it.

Executive Order

In order that significant action can begin even before legislative action is taken, the Commission recommends that the President immediately issue an Executive order which would:

- Direct all Federal agencies preparing new legislative proposals involving construction of buildings and facilities intended to be used by the general public to include provisions on accessibility and use by the disabled and older people.
- Require Federal agencies and the General Services Administration, where appropriate, to survey buildings they occupy to determine their accessibility and usability; and to submit a plan and budget requests for 1970 and subsequent years sufficient to accomplish needed changes.
- Direct Federal agencies administering grants to assist construction of public buildings and facilities by other governmental or private groups to review their basic program authority, regulations, standards, and guidelines governing the use of Federal funds for new construction or remodeling; and to inform the President of any additional legislative authority or Federal funds which would be needed to enable grantees to meet accessibility standards.
- Direct the Secretary of Housing and Urban Development to prepare a detailed plan outlining the manner in which the several housing and urban development programs, activities, and services under his jurisdiction can help to eliminate or forestall the development of architectural barriers in neighborhood facilities and residential public housing.
- In addition, the Commission believes that a strong public statement by the President urging the elimination of architectural barriers in both public and privately owned buildings would stimulate voluntary action throughout the Nation.

State Legislation

The Commission recommends that all States be urged to enact new laws or amend present laws so that, in every State, the law will be specific and will be based on the standard issued by the United States of America Standards Institute. The legislation should include strong enforcement provisions and should provide for the establishment and financing of a small unit in a

single State agency which is assigned full responsibility for enforcing the law.

It is recommended that the Council of State Governments be requested to revise its present model law to incorporate these features.

It is also recommended that State legislatures be urged to review State building codes to determine what changes are needed to achieve compliance with the minimum standards.

In every State there should be an office, adequately financed, which maintains liaison with the Federal program agency, works with universities, professional groups, national, State, and local voluntary agencies, and assists local communities in developing effective programs to eliminate barriers. This office would support demonstrations and research, issue information and training materials, and in other ways stimulate action throughout the State.

Efforts to assist States in developing technically sound legislation should be undertaken by the regional staff of the Rehabilitation Services Administration of the Department of Health, Education, and Welfare, and by voluntary agencies such as the American Institute of Architects and the National Easter Seal Society for Crippled Children and Adults. Other National and State health agencies concerned with problems of people who have special disabilities such as muscular dystrophy, heart disease, or blindness, should let legislatures know how architectural barriers affect the people with whom they work.

II. Research and Demonstrations

Financial Support

There has been minimal investment in the search for new knowledge that might yield more effective and economical ways of enabling the aged and handicapped to participate in community life. Equally minimal has been the investment in demonstrations to test out new devices, procedures, and programs and to stimulate widespread use of those that prove effective. Therefore the Commission recommends that government, industry, and professional and voluntary organizations increase their support of research and demonstrations. We particularly recommend that attention be given promptly to the following projects:

Community Demonstrations

A series of demonstration projects—to be sponsored jointly by architects, builders, and labor unions—should be carried out in a few selected communities. The projects should be designed to achieve barrier-free facilities in the construction of all new public and privately owned buildings which are intended for public use and thus, by demonstrating the practicality of the program, encourage other communities to follow their example.

Products Studies

A review should be made of manufactured products and building supplies to determine how they could be modified to eliminate features that create problems for aged or handicapped people. This would include evaluating existing features and experimenting with modifications of such products as inclinators and household elevators; nonslip floor coverings; beds, tables, desks, and other furnishings; bathroom fixtures and other toilet equipment; and cooking and restaurant facilities. The study should be conducted by appropriate research laboratories and trade groups.

Because it is a major purchaser of such products, the Federal Government could stimulate increased production of existing products that are found to be helpful, and encourage the production of new products by giving preference to them in its procurement policies. This would enable manufacturers and suppliers to count upon reliable markets for items designed with the needs of the handicapped and elderly in mind.

Cost Studies

More data should be obtained about cost and other problems involved in making existing structures more accessible. Aside from the special studies requested by this Commission, the only major source of such data now is the General Services Administration.

Insurance Cost Data

Studies should be conducted to determine how much building owners could save in insurance costs if they adhered to accessibility and safety standards which would not only make it possible for the aged and handicapped to use their buildings but also give added protection to the able bodied.

Study of Recreation Facilities

This study should be designed to determine whether there is any reality in the generally held belief that the disabled are greater accident risks than the able bodied. Many children and adults with braces, crutches, or prosthetic devices are now barred from bowling alleys and other public and commercial recreation facilities because of this belief.

Studies of Personal Factors

Studies are needed to yield more precise data on what effect barriers have upon aged and handicapped people: their morale, their motivation, their physical and mental health.

Evaluation of Barrier-Free Facilities

This study would determine whether buildings which were designed for easy accessibility and use actually meet those standards. A selected group of public and privately owned buildings would be evaluated with the assistance of disabled people.

Continuing Evaluation Studies

Funds should be set aside by Federal, State, and local public agencies and by voluntary agencies for a continuous evaluation of buildings, transportation systems, parks, and other features of the physical environment. These studies should include the social, psychological, and economic costs of denying people free movement within and between communities.

Use of Grants for Research

Federal legislation authorizing grants for construction of libraries, schools, hospitals, and other facilities in many cases includes related research and demonstrations. Grantees should, therefore, plan to use such grants more extensively than they now do for research and demonstrations designed to eliminate or prevent architectural barriers.

Tax Incentives

Studies should be made of the feasibility of Federal, State, and local tax incentives to encourage owners of private buildings to make existing structures accessible to the aged and handicapped.

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III. Education and Information

Although many pertinent facts about the architectural barriers problem have never been gathered, much of the information that is available has not reached the people who need it. The Commission's recommendations for education and information will help to overcome both of these deficiencies:

Widespread Public Education Programs

Since the major obstacle to progress is lack of public awareness of the problem, the Department of Health, Education, and Welfare should assume leadership in planning and carrying out a massive educational campaign, comparable in scope to the Department's program for informing the public about medicare.

Both the Advertising Council and the President's Committee on Employment of the Handicapped should be asked for major assistance in this effort. If adequate funds were provided, the facilities of these organizations could be used to prepare and distribute helpful material for all mass media.

Associated committees of the President's Committee on Employment of the Handicapped, particularly the Women's, Veterans', Library, and Youth Committees, should also be asked to assist by placing special emphasis for the next few years on the architectural barriers problem and what can be done about it.

A systematic approach should be made to all national major civic, religious, cultural, fraternal, union, and business groups, asking them not only to schedule a program on the topic at one of their national meetings but also to set up study committees and action projects so that work on this problem becomes an integral part of their local programs.

To guide citizen participation into constructive channels, statewide planning groups that are concerned with rehabilitation should make an evaluation in depth of State and community action programs. Many are already doing this. Drawing heavily upon the experience and materials of the President's Committee on Employment of the Handicapped and of the National Easter Seal Society for Crippled Children and Adults and similar agencies, the planning groups could help to organize or support existing architectural barriers programs at both State and local levels.

Trade and professional journals that reach persons who are in key positions to influence the creation of a barrier-free environment should be encouraged to place special emphasis on this topic in their articles and editorials and to encourage their advertisers to do so.

Institutes and Conferences

Several types of meetings are recommended by the Commission to bring information to the people most directly involved.

A national organization should plan and sponsor, in cooperation with other concerned groups, a national institute to be held in a different section of the country each year. National progress and urgent problems would be discussed and assessed, with particular questions being assigned to members or associated groups for further study or solution. Such an effort might be cosponsored by national citizens' groups or by citizens' advisory committees to State or Federal Government agencies. A major purpose of the annual institute would be to stimulate voluntary action by owners of private facilities.

Regional institutes on special problems should be held periodically at strategically located universities or in centers of special architectural interest. In connection with these institutes, pamphlets should be prepared for the general public and for special groups, such as architects, teachers and school administrators, librarians, equipment manufacturers, and owners and operators of recreational facilities—all of whom would be invited to be represented at the institute. The institute agenda would include sessions of broad general interest as well as technical sessions for specialists.

Since it will take some time to develop the national and regional institutes, each State, separately or together with other nearby States, should plan to hold an institute within a year to explore the entire problem within its geographic area and assess needed legislation and programing to achieve solutions. The agenda should cover public transportation as well as other architectural barrier problems and could also include plans for improving employment and other rehabilitation services for the handicapped. If new State or Federal legislation on making public buildings accessible has been enacted by the time of the institute, its implications for the State or States could be examined. The Governors' statewide planning bodies could assist in planning and carrying out the institute's proposals. The institute recently held by Hawaii might serve as a guide for the other States.

The Department of Health, Education, and Welfare should see that the topic of architectural barriers receives major emphasis at the National Rehabilitation Conference in 1969.

The Department should also hold a one-time conference of its own key units to work out a common set of standards and guidelines which could be applied to all of the grant programs it administers. The major objective would be to get organizations that receive grants from the Department of Health, Education, and Welfare to make a special effort to see that their facilities can be used by the aged and disabled. A secondary but important purpose of the conference would be to consider ways to expand the use of existing grants for research, training, and orientation programs that deal with accessibility.

Working Groups

Both nationally and through their area and local chapters, building contractors groups and architects associations should form working groups who will take responsibility for early identification of urban renewal efforts and plans for new buildings. With the assistance of building union officials, voluntary health agencies, and other concerned groups, they should discuss accessibility and usability with the owners and financiers of privately owned buildings that are intended for public use. In some places, existing State and local architectural groups could be asked to assume this task, with financial assistance from other local groups.

Consultation

A consultation service should be developed by voluntary health agencies and other concerned groups with the assistance of professional groups. The service should be located in the office of one of the professional design organizations and/or the National Easter Seal Society for Crippled

Children and Adults. Its services would be available to all national organizations serving the aged and the disabled, to national civic and women's organizations, to professional groups—in fact, to any organization willing to join in the movement to remove architectural barriers. Its service would include helping to develop programs that would relate to the special interest of each organization and that would help it to inform its members about the problem and the role the organization can play in alleviating it.

Guides for the Aged and Handicapped

More should be done to enable people to know whether the facilities they need to use are accessible to them. Recommended particularly is the development of an intercity system of information which can be used by travelers. The information in existing local directories could be computerized, thus enabling travel agencies, airports, and train and bus stations as well as offices of local transportation systems in all cooperating cities to make this information available routinely.

There is also need for a continuing, current directory of schools of higher education which can accommodate handicapped students.

Every State and large community should have a directory which provides such pertinent information as what colleges, libraries, courthouses, and other buildings used by the public are accessible to the handicapped and what special programs and services are available to the aged and handicapped.

Guides for Specialists

Professional and business groups should issue guides for their members and associates which would contain special information on how they can make their facilities available to the aged and handicapped. Illustrative of this type of guide is "Planning Areas and Facilities for Health, Physical Education, and Recreation" issued by the Athletic Institute and the American Association for Health, Physical Education, and Recreation.

National Bibliography

The National Easter Seal Society for Crippled Children and Adults and the American Library Association should be requested to develop and maintain jointly a bibliography on architectural planning, architectural barriers, and other related subjects. This is greatly needed by persons doing research and by those who are working on community action programs.

Census of the Disabled

The U.S. Census Bureau, in cooperation with the Department of Health, Education, and Welfare, should conduct a census of the types and distribution of the disabled. This information is needed on a continuing basis to assure the orderly development of program emphases in eliminating barriers.

Data on Foreign Programs

The Departments of Health, Education, and Welfare, Housing and Urban Development, and Transportation, and the General Services Administration and Veterans' Administration should obtain information on what other countries are doing to achieve a barrier-free environment. Special attention should be given to their building practices, residential planning, and public transportation systems.

Orientation Program on School Construction

School administrators and board members and other community leaders who are involved in planning school facilities should receive special orientation. It is recommended that the American Institute of Architects and a group such as the Educational Facilities Laboratories, Inc., jointly develop a plan on how to create school environments that will accommodate handicapped children and thus eliminate the need for constructing special facilities for them.

IV. Additional Recommendations

Revision of Standard Specifications

The United States of America Standards Institute should be asked to expand its accessibility Standard to include specifications for transportation systems and residential housing.

Minimum standards should be established for multiple-unit housing which would apply to entrances to the grounds as well as the building and would also establish specifications for lobbies, lounges, public toilet facilities, restaurant corridors, laundries, elevators, and all other public areas which the disabled would use in common with the able bodied. More specialized modifications and alterations of the units which the aged and disabled would occupy should be undertaken on an individualized basis.

The standard specifications should be applied particularly to housing projects financed in whole or in part with public funds.

Amendment of Model Building Codes

The four model building codes should be analyzed and amended and, as a start on a comprehensive modification program, a drive should be made to get the building codes of the 25 largest cities modified.

Accessible Schools of Higher Education

There should be at least one college or university in every region of the Nation which is designed so that seriously disabled students can attend without having to have special arrangements made for them. These institutions would serve as demonstrations and, by holding workshops for university planners and architects, builders, and similar groups, could stimulate other colleges and universities in the region to make their facilities barrier free.

Citizens' Advisory Group

A final and major recommendation of the Commission is for the establishment of a permanent National Advisory Committee on Environmental Barriers as a successor to this Commission.

Such a committee or council is needed to give continuing attention to legislation, to follow through on the Commission's recommendations, and to provide a direct line of communication with Federal officials for the growing number of citizens who are concerned about the problem and who look to their government to assist in solving it.

APPENDICES

APPENDIX I

Witnesses in Order of Appearance

SUMNER WHITTIER, *Executive Director*
National Easter Seal Society for Crippled Children and Adults
Chicago, Ill.

DONALD FEARN, *Director*
Architectural Barriers Project
National Easter Seal Society for Crippled Children and Adults
Chicago, Ill.

RONALD JUNIUS, *Assistant Director*
Architectural Barriers Project
National Easter Seal Society for Crippled Children and Adults
Chicago, Ill.

WILLIAM P. McCAHILL, *Executive Secretary*
President's Committee on Employment of the Handicapped
Washington, D.C.

EDMOND J. LEONARD, *Assistant Director of Information*
President's Committee on Employment of the Handicapped
Washington, D.C.

HARRY SCHWEIKERT
Paralyzed Veterans of America, Inc., and National Paraplegia Foundation
Washington, D.C.

E. B. WHITTEN, *Director*
The National Rehabilitation Association
Washington, D.C.

JAMES A. PARKER, *Acting Chief*
Architectural Barriers Project
General Services Administration
Washington, D.C.

THE HONORABLE OTTO KERNER
Governor of Illinois
Springfield, Ill.

ALFRED SLICER, *Director*
Division of Vocational Rehabilitation
Springfield, Ill.

DAVID HENRY, *President*
University of Illinois
Champaign, Ill.

TIMOTHY NUGENT, *Professor*
University of Illinois
Champaign, Ill.

DR. GUY RENZAGLIA
Southern Illinois University
Carbondale, Ill.

DR. HENRY BETTS, *Director*
Rehabilitation Institute
Chicago, Ill.

RAY DICKENSON
Administration Visually Handicapped Services
Springfield, Ill.

DR. WILLIAM GELLMAN
General Vocational Services
Chicago, Ill.

EDWARD MATTHEI
The Perkins & Will Partnership
Chicago, Ill.

DWIGHT GUILFOIL, *President*
Paraplegics Manufacturing, Co., Inc.
Bensenville, Ill.

FRED FAY, *Student*
University of Illinois
Champaign, Ill.

HENRY VISCARDI
Human Resources Foundation
Albertson, N.Y.

EUGENE NICKERSON, *County Manager*
Nassau County, N.Y.

HOWARD RUSK, *Director*
Institute of Rehabilitation Medicine
New York, N.Y.

MELVILLE DAUS
Park Department
New York, N.Y.

COURTNEY CALLENDAR
Park Department
New York, N.Y.

JOSEPH FENTON, Ph. D.
Executive Secretary of the Governor's Council on Rehabilitation
Albany, N.Y.

WILLIAM CORREALE
New York City Code Study
Polytechnic Institute of Brooklyn
Brooklyn, N.Y.

COLUMBUS E. LORD
Office of the Assistant Secretary of Defense
Washington, D.C.

EMILE de ARMAS
Director of the Preliminary Planning Service, Office of the Assistant Administrator for Construction
Veterans' Administration
Washington, D.C.

RICHARD KREMB
Architectural Division, Office of Research and Engineering
Post Office Department
Washington, D.C.

MOSES GOZONSKY, *Acting Director*
Elderly and Handicapped Housing
Department of Housing and Urban Development
Washington, D.C.

ROBERT WEAVER, *Secretary*
Department of Housing and Urban Development
Washington, D.C.

JOHN W. EDELMAN
National Council of Senior Citizens
Washington, D.C.

MISS BEVERLY DIAMOND
National Council on Aging
Washington, D.C.

MRS. ALLAN B. FAY
District of Columbia Architectural Barriers Committee
Washington, D.C.

GORDON M. FREEMAN
International President of the International Brotherhood of Electrical Workers
Washington, D.C.

WILLIAM LOTZ
Associated General Contractors
Philadelphia, Pa.

RAYMOND JOHNSON
Associated General Contractors
Washington, D.C.

CHARLES McBRIDE
Associated General Contractors
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BERTRAM BERENSON, AIA
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EDWARD H. NOAKES
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American Institute of Architects
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JOSEPH HUNT, *Commissioner*
Rehabilitation Services Administration
Washington, D.C.

MARY E. SWITZER, *Administrator*
Social and Rehabilitation Service
Washington, D.C.

LAWRENCE WILLIAMS
National League of Cities
Washington, D.C.

Federal Government Liaison Group

MRS. ADA B. STOUGH
Office of Program Policy and Information
Administration on Aging

MR. ISADORE H. BORGEN
Bureau of Disability Insurance
Social Security Administration

DR. JOHN L. CAMERON
Division of State Agency Cooperation
Office of Education

MR. JOHN REESE
Division of Hospital and Medical Facilities
Public Health Service

MR. A. RORKE VANSTON
Division of Mental Retardation
Rehabilitation Services Administration

DR. LOUIS SPEKTER
Children's Bureau
Social and Rehabilitation Service

MR. HOWARD METCALF
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Department of Defense

MR. DAVID BREGMAN
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MR. LEO WERTS
Assistant Secretary for Administration
Department of Labor

MR. HOWARD MACKEY
FHA Technical Studies
Department of Housing and Urban Development

MR. JAMES A. PARKER
Architectural Project Review Section, Office of Design
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MR. EMILE DE ARMAS
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MR. ELMER MOSTOW
Director of Plant and Operations
Department of Agriculture

MR. N. O. WOOD, JR.
Director of Office of Management Operations
Department of Interior

MR. JAMES HOBAN
Design Standards Branch
Federal Aviation Agency

MR. EDMOND LEONARD
Director of Information
President's Committee on Employment of the Handicapped

MR. R. KENNETH BARNES
Division of Rehabilitation Facilities
Rehabilitation Services Administration

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Report of the Federal Agencies in Eliminating Architectural Barriers in Government Buildings

THE PRESIDENT'S COMMITTEE ON EMPLOYMENT OF THE HANDICAPPED, Washington, D.C 20210

Foreword

This report represents a revision of a similar survey made in April 1966 among the Federal agencies and departments. It intends to show how Government administrators have taken the lead in assuring that handicapped citizens are assured entry and use of public buildings, whether as employees or visitors.

In late 1961 this Committee contacted all Federal agencies to distribute copies of a newly issued set of specifications, "Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped." These standards, developed under the cosponsorship of the President's Committee and the National Society for Crippled Children and Adults, received the approval of the American Standards Association.

On occasion of the publication of these specifications, the late President Kennedy commented that:

"The acceptance and adoption of these standards now becomes the business of citizens and governmental authorities everywhere. I am sure they will rise to the challenge.

"I can further assure you that the agencies and departments of the Federal Government that come under the jurisdiction of my office will give full support to this worthy project."

This report demonstrates that the Federal authorities, despite some problems yet to be solved, have met the challenge admirably. They deserve the highest praise for their efforts.

What is particularly heartening is the progress made since the last report was compiled. It is most gratifying to note that the General Services Administration's specifications have been modified substantially during the past year to give much more design consideration to the needs of the handicapped.

HAROLD RUSSELL,
Chairman.

DEPARTMENT OF AGRICULTURE

Copies of the ASA Standard [1] were sent to all Department agencies in April 1962. Conformance with these specifications is usual procedure in large construction projects, which are handled by GSA. Smaller buildings—usually one-story research facilities—are handled by Department agencies directly. Design criteria used by the Department and its contract architects is similar to that used by GSA and conforms to the ASA Standard.

For example, the engineering manual of the Forest Service states that "where physically handicapped persons including wheelchair occupants may be expected to be employed in offices owned by or under the administrative control of the Forest Service, provision for access and facilities for their use shall be provided or designed so that they can be readily modified . . ." and also, "Designs for construction of new buildings and related facilities to serve the public shall be developed with specific consideration to making the facilities accessible to the physically handicapped, where an actual or anticipated need exists." The manual also authorizes modification of existing structures along these lines where a demonstrated need exists, and refers to the ASA Standard as a guide in developing building designs.

The Department recently began participating in grant-sponsored construction, primarily research facilities constructed by colleges and universities. Details of construction have generally followed the practice of the particular institution, without a review of the plans and specifications by the Department to assure conformance to the ASA Standard. However, such a review will be done in the future.

Leased facilities in larger metropolitan areas are provided by GSA. In smaller towns the Department leases its own facilities for periods not to exceed 1 year. Within the limits of available space and funds, and following usual Government contracting procedure, the Department tries to secure leased space at ground-floor level with convenient parking and with access without stairs and other obstruction.

Experience with GSA has been generally good with regard to new construction. In some small new buildings no elevators or ramps are provided for second floor offices. Some of the space offered the Department in old Federal buildings—even some which are extensively modernized—is almost inaccessible to handicapped or elderly people as it is located in basements or very high second floor walkups.

DEPARTMENT OF DEFENSE

The construction agencies of the Departments of the Army, Navy, and Air Force have direct jurisdiction over the provision of facilities for public use. (See the individual reports from these Departments.)

The Department of Defense advised the Army, Navy, and Air Force early in 1962 to take immediate action to incorporate the provisions of the ASA Standard into designs and specifications for new buildings and facilities, as well as for major modifications wherever appropriate and feasible.

In facilities under the jurisdiction of the General Services Administration, the Department of Defense is not aware of any instances where ac-

[1] Now known as USASI Standards.

cessibility to the handicapped and elderly has not been adequately provided.

DEPARTMENT OF THE ARMY

The Army's Engineer Manual prescribes the criteria for features to make existing and new buildings and facilities designed by the Corps of Engineers accessible to and usable by the handicapped. The criteria are applicable to both military and civil works construction, and incorporate the provisions of the ASA Standard with the following exceptions:

a. Elevators will not be provided for structures less than four stories high unless otherwise required or permitted for a particular structure, such as a health facility.

b. The criteria will not be applied in the design of barracks, bachelor officer quarters, family housing, operational structures not open to civilians, or buildings where the employment of physically handicapped is not permitted because of a hazardous activity. The criteria will not be applied to civil works construction in remote and inaccessible locations, except where physically handicapped persons are likely to be employed or to use pumping plants, powerplants, and similar structures.

c. The criteria will not be applied where their application would cause the cost of the facility to exceed the limitations established in legislative or departmental language.

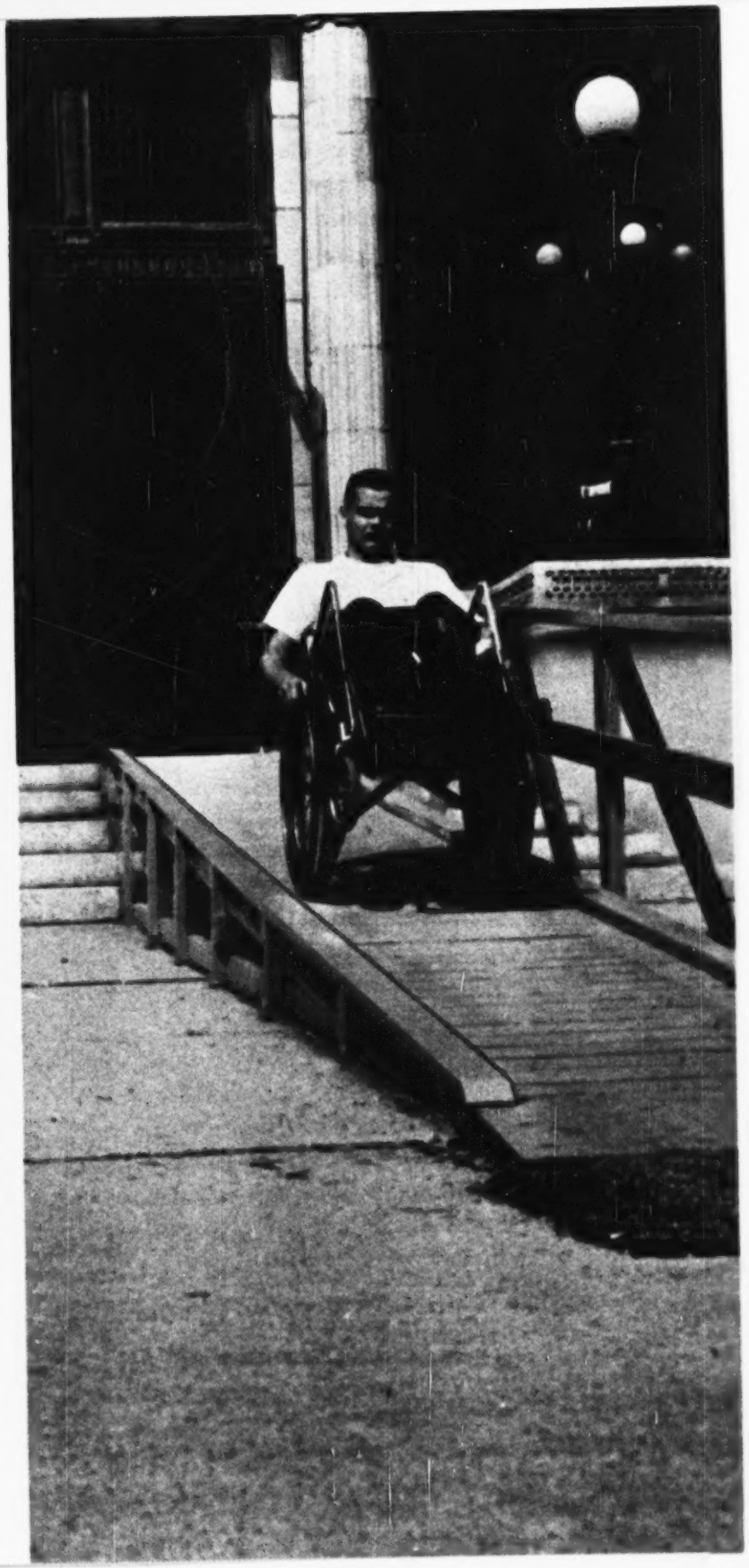
The manual states generally that increasing numbers of physically handicapped persons are being employed by industry and many physically handicapped civilian specialists and professional persons are being employed by the Government. Military and civil works structures will therefore be designed to facilitate access for all such persons having a legitimate reason for entry and use of such military construction as administrative, educational, entertainment, and religious facilities constructed for the Army, and such civil works facilities as administrative buildings, public-access portions of dams, powerhouses, and locks; visitor overlooks, and public-use areas.

Application of the criteria will be considered for all new projects. Existing projects and those under construction will be reviewed with the objective of applying the criteria. Minor alterations may be accomplished by the district engineer without approval by higher echelons. Memorandums on new projects must indicate that the proposed facilities accommodate the physically handicapped.

The Army is not aware of any instance where facilities under the jurisdiction of the General Services Administration have not provided accessibility to the handicapped.

DEPARTMENT OF THE NAVY

The Naval Facilities Engineering Command, which has jurisdiction over construction and modification of Navy-owned facilities and leasing of private facilities for limited public use, adopted in September 1962 the USA Standards Institute, Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped, A117.1. Subsequently, the Naval Facilities Engineering Command revised its Design Manual on Architecture to include these standards. The Command further directed that existing appropriate buildings be modified to provide for suitable use by the physically handicapped when this can be accomplished without significant increased cost. It was particularly emphasized that buildings, such as hospitals,



schools, dispensaries, auditoriums, chapels and administrative buildings be given primary consideration. Special design considerations are being given to such items as drinking fountains, toilet stalls, telephone booths and special ramps. It is not considered that the standards should be applied to barracks, BOQ's, industrial- and shop-type buildings, or to any building which would require the addition of an elevator to make the standard effective.

DEPARTMENT OF THE AIR FORCE

The Air Force is supporting the President's program to make buildings and facilities more accessible to handicapped citizens. Under its policies the Air Force has devoted particular attention to provision of ramp access and egress and other structural provisions for the handicapped. As an example, new major command headquarters incorporate such features. Similar provisions are included to the maximum extent practicable in the design of motion picture theaters, exchanges, clubs, and technical facilities serving or hiring the public and the handicapped.

A general policy statement from the Air Force Manual on Facility Design and Construction is quoted: "Increasing numbers of physically handicapped persons are being employed by industry as sales representatives, consultants, and advisers. Many physically handicapped civilian specialists and professional persons are being employed by the Government. Military structures therefore will be designed to facilitate access for all persons with a legitimate reason for entry into or use of the structures and facilities. Most administrative, educational, entertainment, and religious facilities constructed for the Air Force are likely to be used by the physically handicapped."

The provisions for physically handicapped persons employed by the Air Force conform to the criteria in the ASA Standard, subject to these exceptions:

a. Unless otherwise required or permitted for a particular structure, passenger elevators will not be provided for structures of less than four stories high. Medical facilities in multiple-story buildings, however, are authorized to have elevators conforming to the requirements of the ASA Standard.

b. Excluded structures include military construction. The criteria will not be applied in the design of barracks, bachelor officer quarters, operational structures not open to civilians, nor buildings where the employment of physically handicapped persons is not permitted because of hazardous activity.

c. The criteria will not be applied where their application will cause the cost of the facility to exceed the limitations established in legislation or departmental action.

Where Air Force personnel occupy the General Services Administration's facilities, the buildings have been made accessible to and usable by physically handicapped people in all known cases.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

In early 1962 copies of the ASA Standards were distributed to all persons concerned with construction and management of NASA facilities. A number of buildings were modified in accordance with the standard to provide safer working areas and places for NASA's handicapped employees. Ramps, where required, were installed at building entrances, and arrangements made for employees in wheelchairs, or who use

crutches, for special parking areas. Employees with heart conditions or in wheelchairs usually are assigned to jobs on the first floor in multistoried buildings without elevators. In most cases, stairs, doors, telephones, restrooms, and warning signals conform reasonably close to the specifications.

Later, design criteria and standards for new construction or modification of nonoperational type structures were adopted which, in general, meet or exceed the American Standard Specification.

In the area of grants for construction of research facilities at colleges and universities, NASA takes particular care to insure that its own standards will be maintained. Use of NASA design criteria is recommended, reviews of designs are conducted, and assistance by NASA Field Center technical personnel nearest the college or university is furnished.

Recently NASA has undertaken a total review of practices and procedures in regard to construction and real property. Direct reference to the ASA Standard is planned for incorporation in forthcoming revisions of NASA policy directives covering design criteria and construction standards, and the leasing of property for NASA use. Pending issuance of such revisions, we have again called the subject of ASA Standards to the attention of persons concerned with construction and management of NASA facilities and the leasing of space. Field inspections of facilities will continue to emphasize the need to ascertain and correct deficiencies.

POST OFFICE DEPARTMENT

The Post Office Department's responsibility for design is limited to (1) those buildings which are constructed especially for postal use, financed by private interests and leased to the Department, and (2) a small number of Government-owned buildings where the design responsibility has been delegated to the Department by the General Services Administration.

Our standard design procedure includes the location of public entrances at grade so that the physically handicapped will have convenient access to postal services within the building. In large buildings, automatic public entrance doors are provided, and in multistory buildings, elevators are installed for vertical transportation.

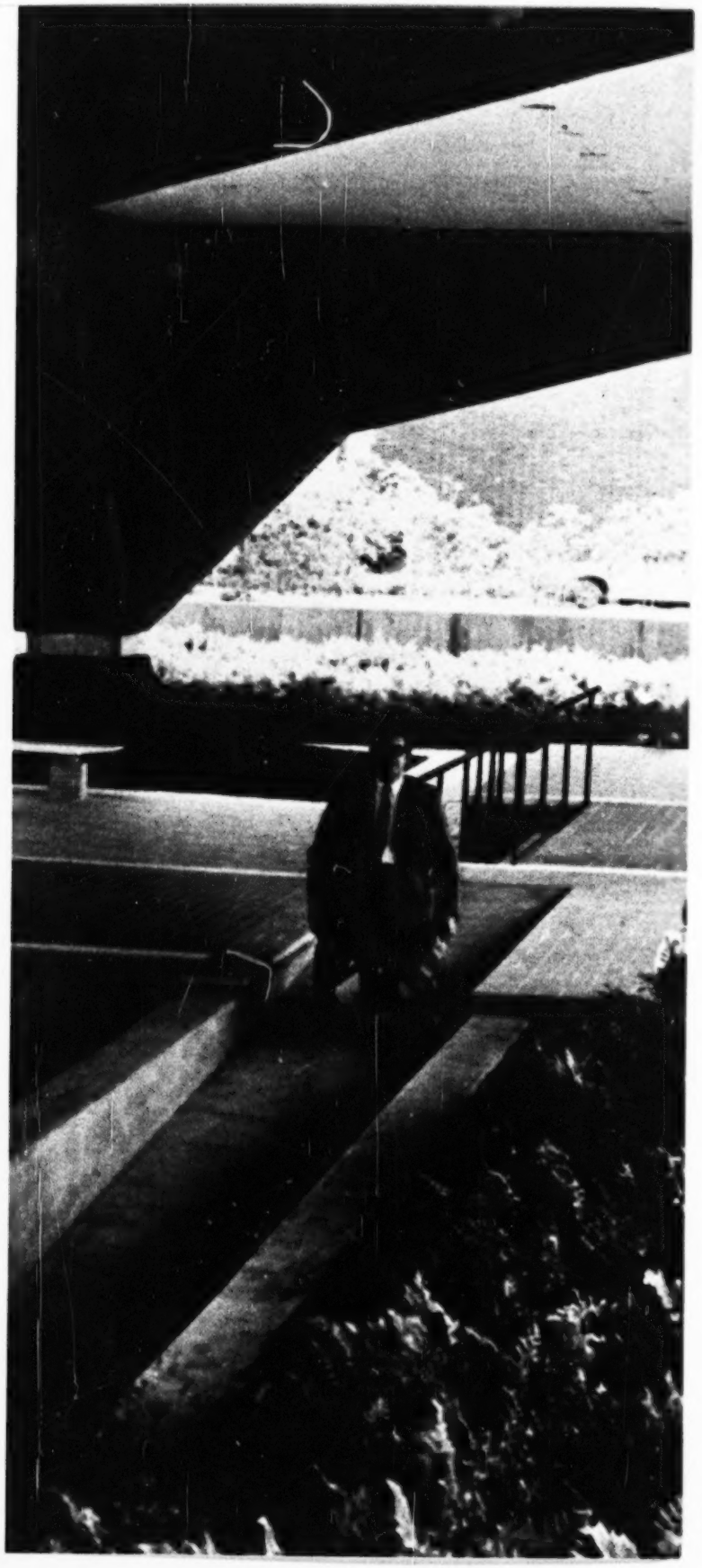
For the accommodation of physically handicapped employees, the Department provides ramped access to the employee entrance and specially equipped toilet facilities. Careful attention is given to the location, arrangement and design of all areas and facilities to be used by the handicapped.

DEPARTMENT OF JUSTICE

The buildings which are constructed under the supervision of the Department of Justice include the penal institutions of the Bureau of Prisons; and border patrol stations, border patrol sector headquarters and alien detention facilities, which are not public contact offices; and a few office buildings which are under the control of the Immigration and Naturalization Service.

All other buildings occupied by the Department are built and serviced by the General Services Administration, which has been always cooperative when requested to modify facilities for the handicapped.

At the Medical Center for Federal Prisoners in Springfield, Mo., access alterations were made to accommodate handicapped inmates.



The Immigration and Naturalization Service requests from GSA ground floors wherever possible or elevator service for the public where offices are above ground floor.

At the border inspection stations, which are at ground level, handicapped persons are inspected in their automobiles.

DEPARTMENT OF LABOR

Principal responsibilities for construction, modification, or leasing buildings occupied by the Department of Labor are within the jurisdiction of the General Services Administration.

An illustration of the improvement of facilities made by GSA is the main Labor building, where ramped access to the building has been provided, and provision of toilet facilities for wheelchair users.

Labor's Bureau of Employment Security does issue guidelines, standards, and specifications for use by State employment security agencies, when funds from State grants are used for the amortization of the cost for construction of office buildings or for the rental of leased premises. In February 1962 each State agency was provided a copy of the ASA Standard.

DEPARTMENT OF THE TREASURY

Most of the buildings and facilities occupied by Treasury organizations are under the jurisdiction of the General Services Administration. The Office of the Secretary and Treasury Bureaus continue to work closely with the General Services Administration to overcome deficiencies in both Government and leased space. It is held essential that all Treasury-occupied buildings meet wherever feasible the concepts of the American Standards Association. The Department, in view of GSA's economic and legal limitations, exerts great efforts in the direction of adapting leased space to the special requirements of the handicapped.

The Bureaus of the Mint, Engraving and Printing, and Customs have direct responsibilities in certain areas of general purpose construction. In the main, the building design and construction facilities of GSA are utilized and its specifications and standards followed. The Bureau of the Mint, in conjunction with GSA, has currently under construction in Philadelphia a new mint building that includes basic facilities for the convenience of the physically handicapped, both employees and the visiting public.

Treasury has long-range plans for a major size office building in the District of Columbia. It is intended that special features for the comfort and convenience of the handicapped would be included.

The Main Treasury Building and Annex emergency readiness, including evacuation under all emergency situations, provides special consideration for the physically handicapped.

All Treasury Bureaus having construction planning responsibility have received copies of the American Standards Association's specifications with the recommendation that their use be implemented whenever possible.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

The construction of buildings and the acquisition of leased space for use by the Department is under the jurisdiction of the General Services Administration. HUD has found the GSA to be fully responsive to suggestions which would assure reasonable access to the handicapped. The design of HUD's new headquarters building now under construction in Washington, D.C. complies with GSA's current standards for providing access and use by the handicapped.

In March 1962, copies of the American Standard Specifications for *Making Buildings and Facilities Accessible to, and Usable by the Physically Handicapped* were distributed within the Department, including regional offices.

Since the enactment of the Housing Act of 1964, which provided for the first time for a wide range of federally assisted housing programs to assist in meeting the need for suitable housing for the handicapped, HUD has approved, or is processing, on an experimental basis, a number of projects in which all or a substantial propor-

tion of the units are being planned for occupancy by the handicapped. These include a 164-unit low-rent public housing project in Toledo, Ohio, which is now nearing completion and in which half of the units are planned for occupancy by the handicapped and the other half by the elderly. A 150-unit low-rent public housing project in Seattle, Wash. which also may combine the elderly and the handicapped is now in the planning stage, and in recent months, the Housing Authority of Fall River, Mass., also has submitted an application to HUD for a 201-unit low-rent project for the elderly and the handicapped.

In Omaha, Nebr., the Omaha Association for the Blind is sponsoring a project for 40 blind families or single persons under FHA's section 221(d)(3) below-market interest rate program for the low and moderate income group. This was one of the first projects receiving a reservation for rent supplements following the enactment of the rent supplement program in the Housing and Urban Development Act of 1965. FHA has made a commitment to insure this project in the amount of $425,000 and has contracted with the owners of $22,000 in annual rent supplements on behalf of the prospective occupants.

Under HUD's section 202 direct loan program for the moderate income elderly, the Pilgrim Lutheran Church for the Deaf is planning a 112-unit project for the elderly and deaf in Los Angeles, Calif. This project, financed with a Federal loan of $1,723,000, is under construction and is estimated to be completed by mid-1968. A formal reservation for rent supplement payments of up to nearly $12,000 annually has been made to assist qualified low-income occupants of this project when it is completed.

In October 1966, the FHA issued its revised minimum property standards for housing for the elderly, which includes special consideration for the handicapped. In addition, with the increased recognition of the need for housing specially designed for the handicapped and with the growing number of sponsors interested in serving this need, HUD is developing a guide for planning and design of housing for the physically handicapped.

DEPARTMENT OF TRANSPORTATION

The Department of Transportation is taking steps toward making travel easier, safer, and more comfortable for the physically handicapped. This effort includes the National Highway Safety Bureau's safety standards for special controls on cars for the handicapped, the favorable design features of the high-speed trains soon to be operating between New York and Washington sponsored by the Federal Railroad Administration, and the active research program within the Office of Assistant Secretary for Policy Development.

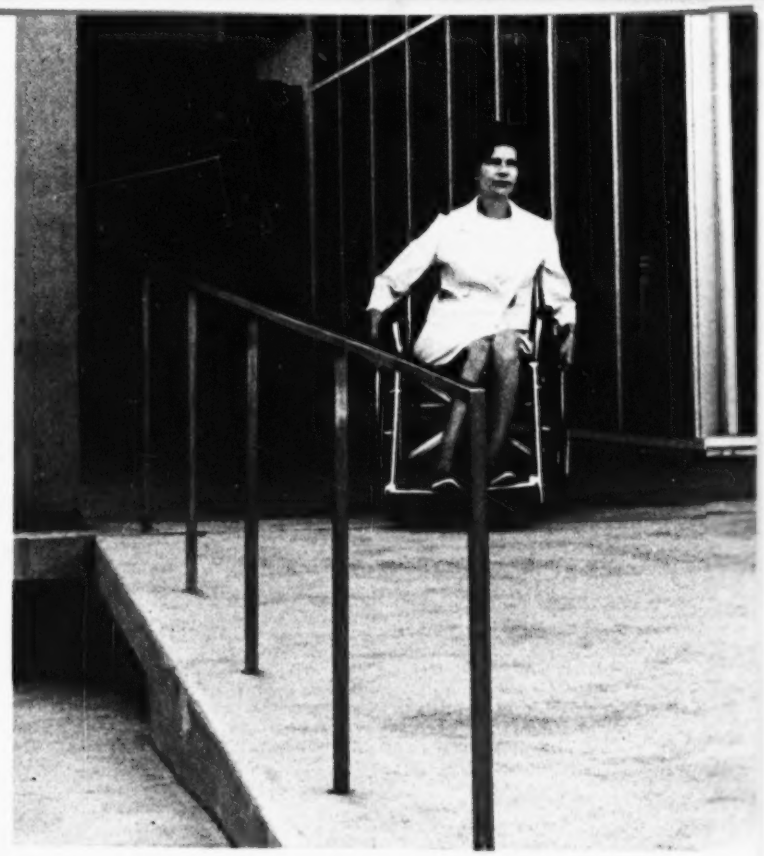
The objectives of this research program, the major part of which will soon be under contract to industry, are threefold:

1. To adopt a set of guidelines for transportation planners and operators on the needs of the handicapped;

2. To identify a technique to use locally to analyze the social and economic benefits of the guidelines; and

3. To prepare a general assessment nationally of the social and the economic impact resulting from adoption of such guidelines.

It is anticipated that the results of this current research program will influence current standards of construction and design of the transportation vehicles, terminals and systems as a whole.



CIVIL SERVICE COMMISSION

The Civil Service Commission building in Washington provides ground floor lobby access from both the street and underground driveway through doorways usable by individuals in wheelchairs. The lobby provides direct access to elevators serving the entire buildings, the auditorium and the cafeteria, and to men's and women's restroom facilities. These restrooms have been modified for use by the physically handicapped. Telephone and drinking water facilities, specially modified for the handicapped, have been installed in the lobby.

The Commission has no direct jurisdiction over constructing, modifying or leasing facilities for public use, with all its space allocations falling within the jurisdiction of the General Services Administration.

Outside Washington, D.C., the Commission has offices open to the public in some 80 different buildings, principally regional offices and interagency boards of examiners. Thirty-four of these are in leased space, and elimination of architectural barriers in these can be obtained only by negotiation with the lessor. In only one of these leased locations is there a major barrier to access by the handicapped. The interagency board office at Monterey, Calif., is on the second floor of a building having no elevator service. No space meeting accessibility standards has been available to this time, but efforts are continuing to move the Monterey office to ground floor or other suitable space.

Commission offices in Government-owned buildings are generally accessible to handicapped persons. Some deficiencies in restroom facilities, height of drinking fountains, and telephone accessibility have been observed and reported to GSA for corrective action.

Major architectural barriers still exist only at the Commission's Philadelphia regional office, housed in the U.S. customhouse. GSA has authorized alterations and improvements estimated to cost $14,700, to be effected as soon as funds are available.

DEPARTMENT OF STATE

The General Services Administration is the custodian of all buildings occupied by the Department of State. GSA has fully cooperated in provided facilities and building space accessible to handicapped persons. In modifying areas containing facilities for public use, consideration is given to building standards issued by the American Standards Association.

GENERAL SERVICES ADMINISTRATION

General Services Administration policy with respect to the provision of facilities for the physically handicapped in new construction is contained in its handbook. These standards are also provided for on remodeling projects whenever they can be feasibly applied. Following is the pertinent section of the handbook:

a. Access.—All new Federal buildings shall provide access of wheelchairs from street or sidewalk to every reasonable subdivision of space where physically handicapped persons may visit or work. Where possible the main entrance to the building shall be at grade level, without steps. Where steps are unavoidable at the main entrance, grade-level access to a secondary entrance, or access by means of a ramp with a slope not greater than 5 percent shall be provided.

b. Elevators.—All new Federal buildings with one or more stories other than the entrance story shall be provided with at least one passenger elevator sufficient to accommodate a wheelchair. Where the limit of funds does not permit the installation of an elevator the building shall be designed to permit its future installation with a minimum of structural changes. Refer to HB, Mechanical and Electrical Engineering (PBS P 3460.1A).

c. Conveniences.—All new Federal buildings shall be provided with the following conveniences for persons confined to wheelchairs:

1. One men's and one women's public toilet on each floor shall be designed for adaptability to wheelchairs by providing one toilet stall 3 feet 3 inches wide with a water closet 20 inches high, and 3-foot 3-inch wide

doors to the toilet room itself, in accordance with Design Data 28–20–2. Accessories shall be in accordance with Design Data 28–20–3. One men's and one women's public toilet, preferably on the first floor, shall be fully equipped for the handicapped, with two assist bars mounted on the walls of the wide toilet enclosure.

2. All drinking fountains and electric water coolers shall be mounted with the top of the bubbler not over 38 inches above the floor.

3. At least one public telephone shelf, mounted 32 inches above the floor, shall be located near the entrance provided for the handicapped. If a recess is provided for this shelf, it shall not be less than 30 inches wide.

d. Entrance.—When economically feasible, power-operated entrance doors, in accordance with Design Data 28–7–10, shall be provided at the entrance for the handicapped. A manual door swinging in the direction of egress shall be provided not more than 20 feet from the power-operated door, in accordance with building exit requirements. Revolving doors are not suitable for the needs of the physically handicapped.

e. Alterations.—The above requirements shall be applied to major alterations to existing Federal buildings to the extent that they are architecturally feasible. If a ramp with a 5 percent slope is not feasible, a ramp with a slope not exceeding 1 foot in 12 feet shall be provided.

GSA has repair responsibility for some 4,800 federally owned buildings. It is GSA's practice to provide, to the extent practical and within funding limitations, facilities necessary for handicapped persons to visit and work in these buildings. Items which have been provided include street-level entrances, ramps bypassing entrance steps, elevators, special drinking water fountains, special toilet facilities, and public telephones—all in accordance with the ASA Standard. A continuing survey of existing buildings was initiated some years ago to insure that whenever feasible necessary items are being provided.

As a general practice, it is not feasible for GSA to incorporate the specifications of the American Standards Association in leasing solicitations. This is because GSA leases space in various quantities which may comprise only a portion of the space available in a building. Particularly when very small amounts of space are required, it would not be economically feasible to require lessors to install special facilities for the handicapped. When an agency advises GSA of the necessity for such facilities, however, every reasonable step is taken to insure the leasing of space which is easily usable by the handicapped.

VETERANS' ADMINISTRATION

The Veterans' Administration is very conscious of the need to eliminate architectural barriers and, to this end, all Veterans' Administration buildings are designed to be fully accessible to all handicapped citizens, be they veteran, employee, or visitor.

The VA has definite criteria which assure accessibility by the handicapped, the elderly, and the cardiac patients to all of its installations. Its design criteria very closely parallel the ASA Specifications, which in development, were based on the VA Specifications already in existence.

The VA has separate regional offices and clinics in buildings under the custody of GSA. Design and construction of these facilities comply with GSA criteria for making buildings accessible to the physically handicapped. VA frequently provides preliminary sketches to GSA showing the desired arrangement for allocated space. When problems of accessibility exist, GSA has been very cooperative in improving the conditions by relocation of the activities or by necessary changes.

The VA is presently rearranging the format for

its construction standard, "Facilities for the Handicapped (Other Than Outpatients)," to more generally follow the format of the ASA Specifications. At the same time, it is carefully reviewing every item of the Specifications to assure compliance with up to the minute thinking in design for the physically disabled.

DEPARTMENT OF THE INTERIOR

The headquarters building of the Interior Department is under the jurisdiction of the General Services Administration. Installation of special toilet features for both men and women in this building, as well as a special ramp with handrails at the street entrance of the building to augment the five automobile ramps leading from the basement of the building to elevators, has been completed.

Special entrance and use facilities in other GSA controlled buildings of the Interior Department in the Washington area are deemed adequate.

Copies of the GSA Standard were distributed some years ago to all Interior Bureaus and Offices outside Washington, urging that specifications be utilized and put into effect wherever possible. Ramp access has been provided for in all buildings that the Interior Department operates for the general public's use, including concessioner's establishments of hotels and lodges.

INTERSTATE COMMERCE COMMISSION

The Commission has no direct jurisdiction over the construction, modification, or leasing of facilities for public use, nor does it participate in grant-supported construction. Its offices, both in Washington and the field, are located in buildings under the jurisdiction of the General Services Administration.

In August 1965, a GSA contractor completed the installation of a ramp and automatic doors at one entrance of the Washington building, and of handrails at the steps leading to two other entrances, making the building readily accessible to handicapped employees and visitors. Toilet rooms and other facilities of the building have been modified accordingly.

DEPARTMENT OF COMMERCE

Normally, the acquisition of leased space and construction of buildings for use by the Department is done by the General Services Administration. The Department has always found GSA to be most receptive and responsive to suggestions for space changes which would assure free access to handicapped persons having business with the Department.

The ASA Standard, created with help of the National Bureau of Standards, was sent to all Bureaus and Offices of the Department in March 1962 for guidance in making future changes or modifications to facilities.

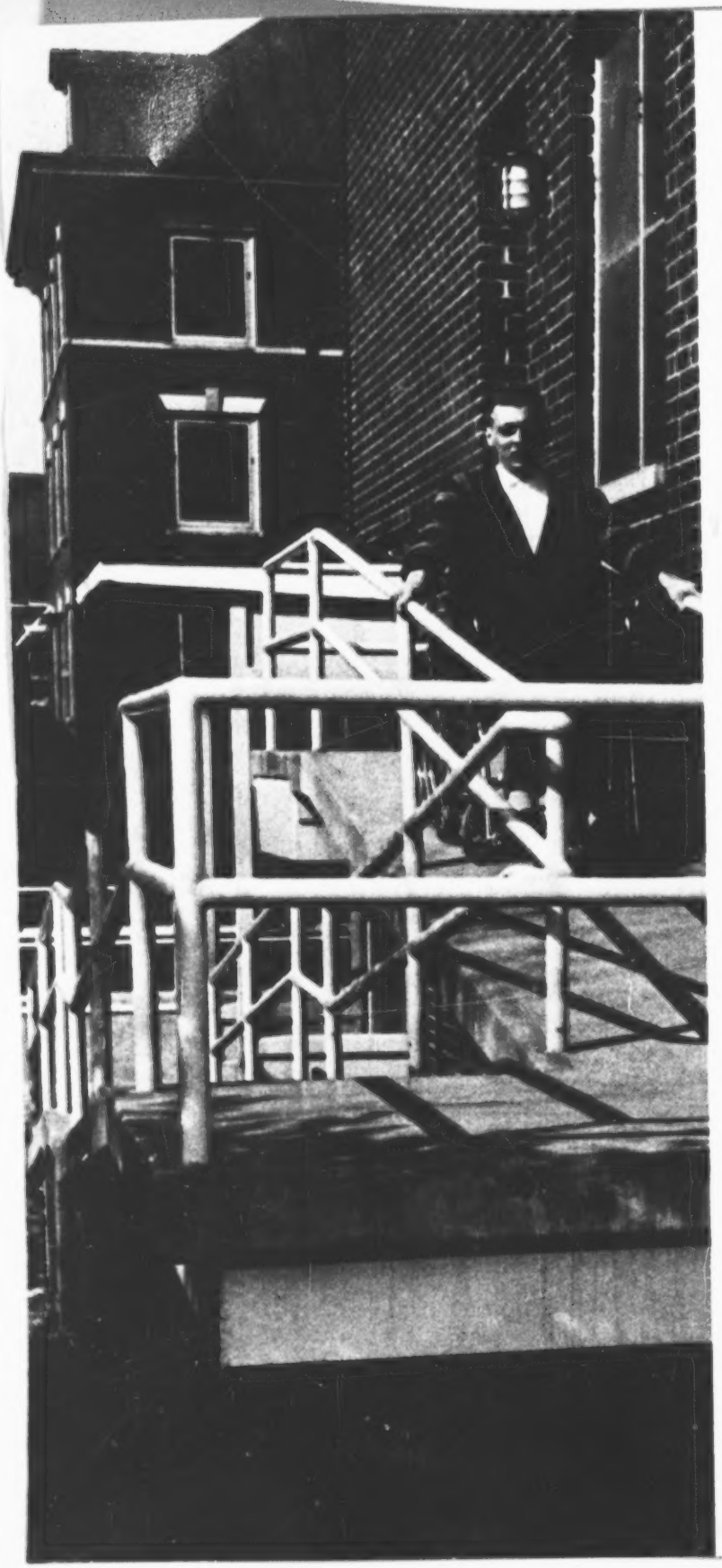
The Economic Development Administration of the Department does participate in grant-supported construction. A large portion of the public works program of the Economic Development Administration and all of the Appalachian assistance programs are supplemental in nature—i.e., many other agencies of the Government have jurisdiction over the construction design. The major portion of the direct-grant program of EDA consists of water and sewer facilities. Because of these circumstances EDA has not formulated any design criteria for grant-supported construction with respect to accessibility to the handicapped and elderly.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Starting in 1965, the Department issued guidance in its Facilities Planning and Construction Manual which incorporated the American Standards Association standard specifications. This manual prescribes policies and procedures applicable to all construction accomplished by the Department. The General Services Administration has been furnished copies of this document for use in applying these standards to projects constructed for the use of this Department. The Department has, in addition, been coordinating with the General Services Administration, the installation of facilities for the handicapped in existing buildings occupied by the Department in the Washington, D.C., area.

At present, the extent to which the needs of the handicapped persons are recognized in the construction of facilities financed with funds provided by this Department varies among programs. In some instances, the Congress enacted legislation which specifically provides that the buildings erected must be accessible to and usable by handicapped people. Other legislation does not include this requirement, but permits the Secretary to develop regulations with respect to approvable projects, including provisions on accessibility. However, in other instances, there is no requirement (either in the authorizing legislation or in regulations) that the needs of the handicapped be taken into account in the review and approval of construction projects.

In those construction programs where there has been no requirement for the use of such criteria, the Department has directed the agencies to reexamine the basis for the lack of such criteria.



State and Local Efforts To Eliminate Architectural Barriers[1]

Introduction

The Problem

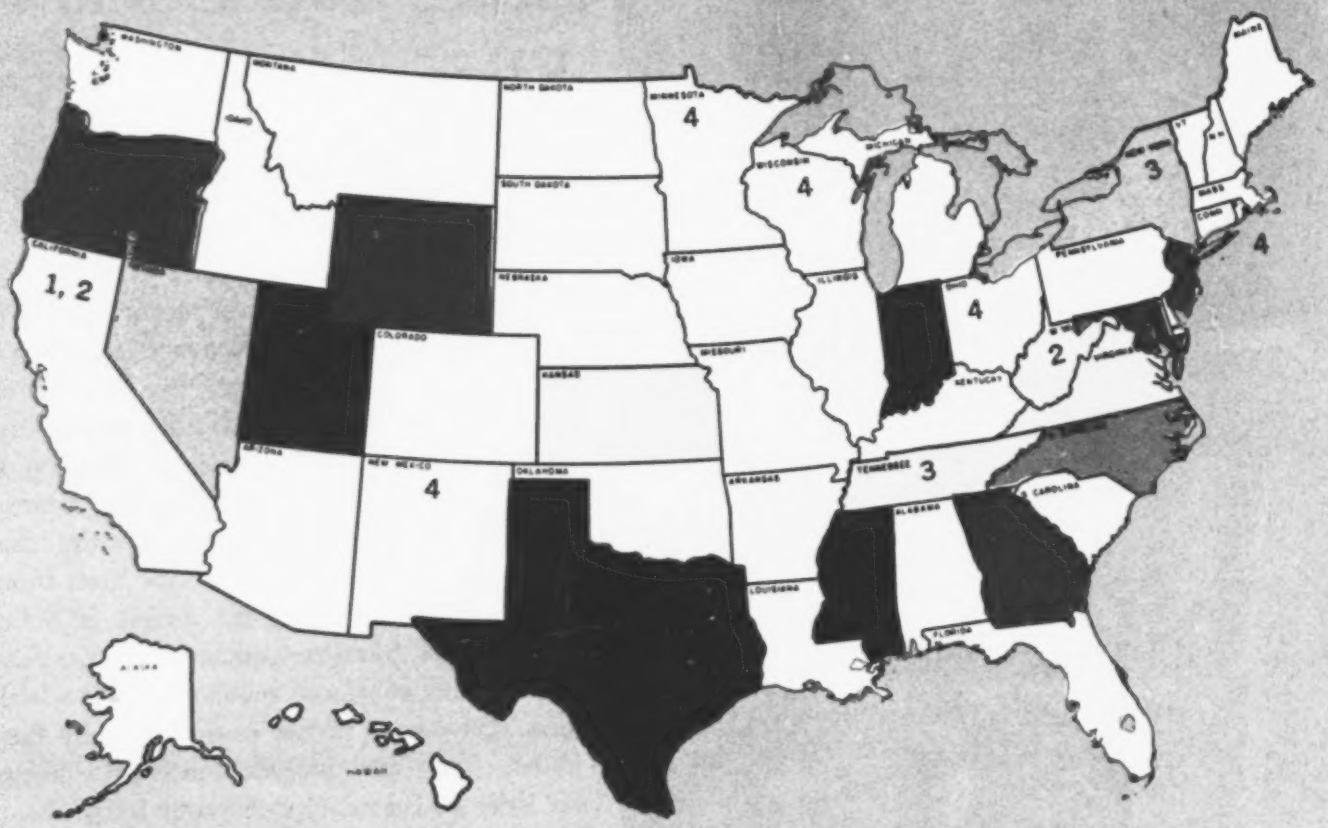
Approximately 22 million people in the United States have physical handicaps that impede their ability to lead full and productive lives. Of these, about 12 million have disabilities serious enough to affect the kind of work they do. Many of these citizens have been denied education, recreation, employment, and other opportunities due to architectural barriers which have been thoughtlessly incorporated into the design of buildings and facilities. Such barriers include stairs or steps, narrow doorways, and revolving doors which inhibit convenient access to buildings by the disabled. They also include inadequate restroom facilities and unreachable water fountains, public telephones, and elevator buttons. If the handicapped cannot enter and fully utilize public buildings, they cannot vote, conduct ordinary business, worship, or otherwise become independent, self-supporting members of society.

The purposes of this study were: First, to determine what efforts are being made by state and local governments to eliminate architectural barriers to the handicapped and, second, to examine the activities and attitudes of nongovernmental agencies and private citizens as they relate to the effect of architectural barriers on handicapped persons.

The report also includes indepth case studies of seven cities that have initiated or supported architectural barrier removal programs. These case studies are concerned primarily with the methods by which the barrier problem has been approached and the effectiveness of such methods. Consideration is also given to local government organizations, political relationships, geographic characteristics, and other factors which may influence local barrier removal efforts.

[1] Source: "State and Local Efforts To Eliminate Architectural Barriers to the Handicapped," National League of Cities, Department of Urban Studies, Nov. 1967.

Status of Legislation on Architectural Barriers By States, 1967



Legislation Passed

Resolution

Executive Order

Building Code Amendment

Legislation Pending

Legislation Defeated

No Action

[1] Resolution applies only to schools.

[2] Legislation defeated in recent session; will be reintroduced.

[3] Legislation also pending or under study.

[4] Architectural barriers requirements included in state building or other code under legislative directive.

The Method

The bulk of the raw data used as the basis of this study was obtained though the use of survey questionnaires. Questionnaires were mailed to the following individuals, groups, and agencies:

1. State attorneys general; State agencies involved in the planning or construction of public buildings; and State officials known to have responsibility for enforcement of statutes, executive directives, and administrative decisions relative to architectural barriers. In addition, directors of State divisions of rehabilitation were asked to supply information not available through other sources.

2. Mayors and city managers in all cities and townships having 50,000 or more inhabitants and county administrators in all counties with populations exceeding 100,000. Questionnaires returned from these sources were used as the basis of case study city selections.

3. Building material manufacturers and suppliers, associations of facility operators, professional and technical organizations, and associations representing the physically handicapped.

4. Approximately 10 percent of the registered architects in the United States.

The following table lists the number of questionnaires sent to each group and the number and percent of replies received.

Questionnaire	*Number mailed*	*Number replies received*	*Percent return*
Attorneys general	50	44	88
State officials	140	83	59
City officials	379	278	73
County officials	272	121	44
Architects	2,975	704	23
Building materials			
Manufacturers-suppliers	7	6	86
Facility operators	15	10	60
Professional and technical			
Organizations	24	17	71
Handicapped groups	15	12	80
Totals	3,877	1,275	33
			Average.

A prominent architectural firm in Washington, D.C., was commissioned to do a comparative cost analysis of several types of public buildings, with and without barrier-free design features.

Finally, a well-known public opinion research firm was retained to determine the level of public awareness of the needs and problems of the handicapped and architectural barriers. This determination was made by use of standard random sampling techniques structured to achieve representative geographic, age, sex, occupational, and educational distribution.

Summary of Major Findings and Conclusions

Findings Based Upon an Analysis of State Laws and Regulations Relative to Architectural Barriers

1. State governments have made considerable progress during the last 5 years in their efforts to make publicly owned buildings and facilities freely accessible to the physically handicapped. Such efforts have been directed by statutory requirements in 34 States, by legislative resolution in five States, by building codes in two States, and by executive orders in three States.[1] In the remaining six States some progress in barrier elimination has been made as a result of administrative decisions by those involved in the planning and construction of public buildings and facilities.

2. The "American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped" is the basis for laws and regulations in a majority of States. The specifications were adopted in toto in six States and by reference in eight States; an additional 15 States used the specifications in part as the basis for their State laws or regulations. Two other States have recommended utilization of the ASA Specifications in their legislative resolutions.

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[1] In a number of the 34 States which have enacted legislation relative to architectural barriers, State regulatory agencies have been directed to promulgate rules and regulations which were subsequently incorporated into building or other codes.

3. One of the most important aspects of a good architectural barriers law, irrespective of compliance requirements, is the assignment of enforcement responsibility. If enforcement is centralized, and if the law has been adopted into the State building code or other code, then the chances of uniform, statewide implementation are improved. Where enforcement responsibility is widely dispersed or nonexistent, opportunities for evasion are greatly increased.

4. The successful implementation of State laws and regulations relative to achitectural barriers depends upon a conviction of their value, the development of systematic enforcement procedures to insure compliance, and financial and administrative support by State legislatures and officials.

5. With or without statutory requirements or other regulations, the elimination of architectural barriers depends on the awareness of and recognition given to the needs of the physically handicapped by those who direct, supervise, or influence the planning and building of public buildings and facilities. A great deal more needs to be done to encourage an increased awareness of the needs of the physically handicapped in gaining access to and utilizing public facilities on the part of State and local officials.

Findings Based Upon a Mail Survey of Local Government Efforts To Eliminate Architectural Barriers

1. Local governments have made only limited progress toward the elimination of architectural barriers in buildings and facilities open to, and used by, the public. The great majority of the Nation's cities and counties have not undertaken any programs designed to eliminate architectural barriers to the handicapped. In response to questionnaires sent to 379 cities and towns and to 272 counties, only 95 cities and 42 counties reported local efforts to eliminate barriers.

2. The need for the elimination of architectural barriers has not been clearly demonstrated to a very substantial number of officials of political subdivisions. Lack of apparent need is the reason given by approximately 40 percent of the city officials and by approximately 30 percent of the county officials for the absence of programs designed to make public buildings accessible to, and usable by, the physically handicapped.

3. Political subdivisions tend to favor enactment of State legislation to eliminate architectural barriers to the handicapped in the absence of a clear and apparent need for action by local government. This is indicated by the fact that "absence of a legal requirement" was the second most frequently given reason for the lack of a barrier elimination program, and enactment of State legislation was considered by city and county officials as one of the best means for making public buildings accessible to, and usable by, the handicapped.

4. Despite the willingness of local officials to rely upon State legislation, elimination of architectural barriers in the design stage was considered the most effective way to assure barrier-free construction when responses of local officials were evaluated on a weighted scale.

5. The existence of local committees to support elimination of architectural barriers, especially in the cities, almost guarantees local action in dealing with this problem. With only one exception, every city that reported such a committee had made efforts to eliminate barriers. On the other hand, the absence of an architectural barriers committee does not preclude the establishment of such a program.

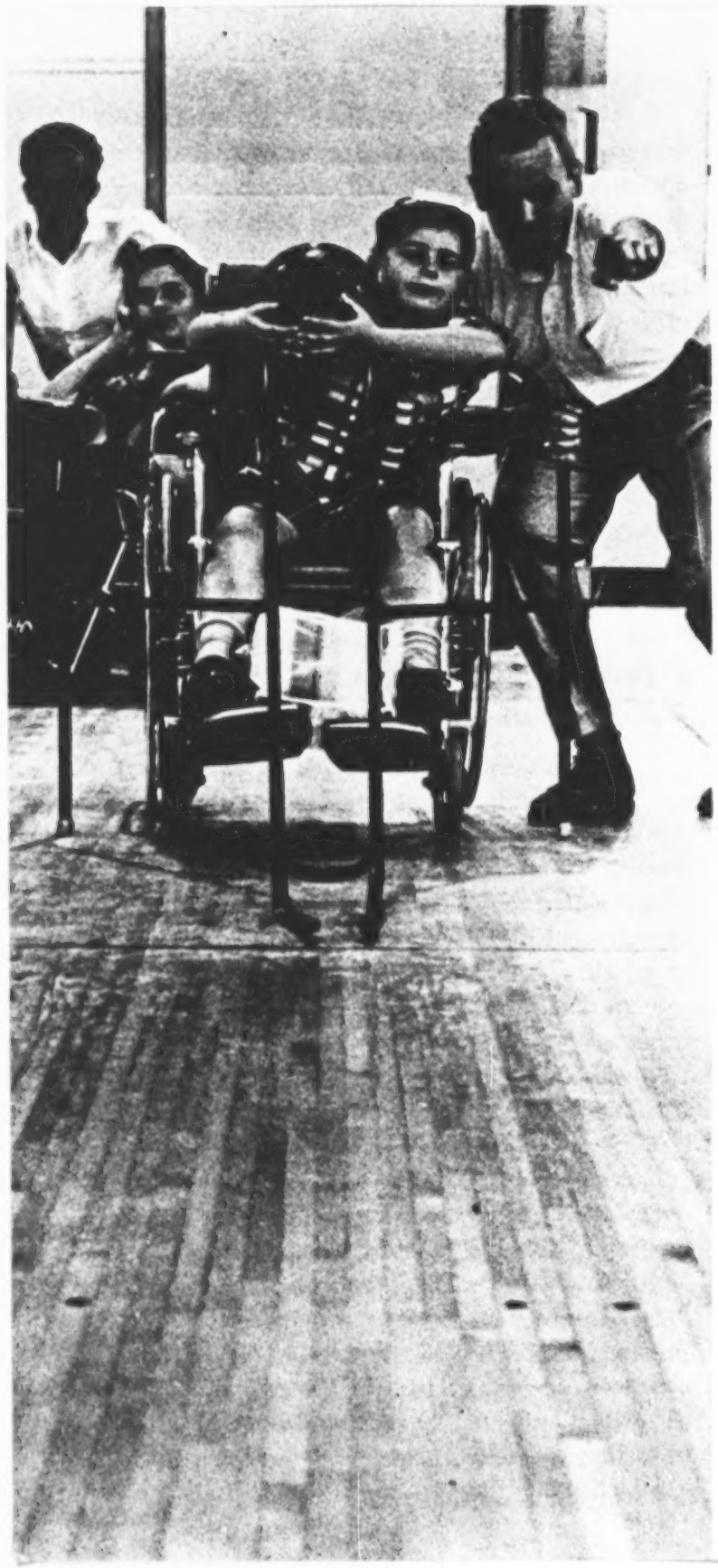
6. Municipal ordinances and State laws relative to the elimination of architectural barriers appear to be of only limited effectiveness. They generally apply only to new, publicly owned building; tend to be permissive rather than mandatory because of the inclusion of "escape" clauses; and frequently are ambiguous with respect to the responsibility for enforcement. In addition, where enforcement responsibility is clearly fixed, funds are often not provided for implementation. However, only a few local officials consider their legislation ineffective. Where it is so considered, ineffectiveness is attributed to the absence of mandatory provisions.

Findings Based Upon a Nationwide Survey of Public Attitudes Toward the Architectural Barriers Problem

1. The majority of the people in the country are not particularly concerned about the problem of architectural barriers to the handicapped. Although seven out of 10 persons interviewed in a nationwide public opinion survey were aware of the physical obstacles that impede the mobility of handicapped persons, approximately 64 percent indicated that they had given the problem little or no thought.

2. Generally speaking, women are more sympathetic to the problem of architectural barriers than men. In addition, the youngest and higher educated groups were more aware of the problem, considered it to be more serious, and were more favorably disposed toward greater community action to remove barriers than any other groups.

3. Assuming the survey sample was truly representative of the U.S. population as a whole, about 18 percent of the people in this country are directly affected by the problem of architectural barriers. Seven percent of these are them-



selves physically handicapped and an additional 11 percent have handicapped persons in their families.

4. Potential public support for the institution of barrier elimination programs appears relatively high. Approximately 58 percent of the people interviewed considered barriers a very serious or fairly serious problem. About 63 percent of the respondents felt that their community should do more than is now being done to overcome the physical obstacles to the handicapped; and about 73 percent of those interviewed said that they would approve of the use of tax money for the elimination of architectural barriers.

Findings Based Upon a Mail Survey of Professional, Trade, and Facility Operator Organizations Relative to Architectural Barriers

1. Architects generally appear to be unfamiliar with the "American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped." Although 511 of the 709 architects responding to the questionnaire stated that they had designed buildings in which obstacles to the functionally limited had been eliminated in the design stage, only 251 architects acknowledged that they were acquainted with the ASA Specifications, and only 143 indicated that they had conformed to those specifications in their design.

2. About 60 percent of the responding architects were familiar with the terms "architectural barriers" and "barrier-free design," mostly due to articles in professional journals. Only a small percentage of architects specified professional education as a source of their exposure to this subject.

3. Most of the national special interest groups are aware of the accessibility problems encountered by the disabled and feel that the elimination of architectural barriers is a worthwhile cause. Relatively few of these groups, however, have formulated a policy on this matter and even fewer have made an effort to inform their members of mobility problems of the physically handicapped.

4. The majority of the special interest organizations feel that the architectural barriers movement will have either a beneficial effect, or no effect, on their interests. Considerable doubt exists, however, concerning the cost factor. The full support of these organizations therefore depends upon a clear demonstration that adherence to barrier-free design criteria will not impose an additional burden on their members.

5. Legislation is the most controversial aspect of the architectural barriers problem. The majority of architects and special interest groups recognize the social desirability of legislation that would eliminate architectural barriers to the handicapped. However, these groups indicated deep concern that such legislation might increase costs appreciably, inhibit creativity, or be unnecessarily restrictive. Their support or opposition to such legislation would be contingent upon these factors.

Findings Based Upon a Mail Survey of Handicapped Interest Groups

1. Handicapped interest groups have not been as prominent in the architectural barrier movement as they might have been. The reason for this is that barrier elimination is only one facet of the comprehensive programs most of these groups are promoting. Emphasis on other items with higher priorities has precluded increased efforts in promoting a barrier elimination program.

2. Virtually all handicapped interest groups are in favor of architectural barriers legislation, but, as several pointed out, mere enactment of laws is not the final answer. Constant vigilance would still be necessary in order to assure compliance.

3. Most of the efforts made in connection with barrier elimination appear to have been directed inward. The problem has been the subject of discussion within handicapped groups, it has been featured at meetings and conferences, and information has been disseminated to local groups and chapters. More emphasis should be placed on contacting outside groups (governmental, social, business) with regard to this problem.

Findings Based Upon an Analysis of Costs Involved in the Construction of Barrier-Free Buildings and Facilities

1. The provision of special or additional fixtures, features, or space needed to make buildings fully accessible to and usable by handicapped persons will increase costs; however, cost analysis of a small sample of typical buildings indicates that the amount of such increase is relatively small—substantially less than 1 percent of total construction costs unless an elevator must be added to the structure. Cost increases attributable to the installation of an elevator for the specific purpose of making buildings and facilities accessible to, and usable by, the handicapped may be relatively few in number. Today, much new building construction is either single story, and does not require elevator installation for accessibility, or is in excess of three stories, and elevator costs should be considered a necessary component of conventional construction costs.

2. In view of the recognized social value to the physically handicapped, the increase in safety to people without such handicaps, and the minimal increase in construction costs, local and State governments should make a vigorous effort to insure that all buildings and facilities constructed with the use of government funds be made accessible to, and usable by, the handicapped.

Findings Based Upon Case Study Examination of Local Efforts To Eliminate Architectural Barriers

1. Major impetus to local efforts to eliminate architectural barriers to the physically handicapped has been provided by public and private health and welfare agencies and organizations, particularly those that represent or are mainly concerned with problems of the handicapped, and by private individuals. Foremost among these groups are the local committees for employment of the handicapped and societies for crippled children and adults.

2. The great majority of local and State laws and regulations relative to architectural barriers apply solely to governmental buildings and facilities. Such structures, although of primary importance for the maintenance of community health, education, and welfare, are not places in which large numbers of physically handicapped individuals can find employment and thus make a useful contribution to society. The great majority of the buildings in which employment opportunities exist are privately owned in our society. As a consequence, increased effort must be made to secure the cooperation and support of the business community, which to date has given little support in most areas.

3. Elimination of architectural barriers must of necessity be a long-term program. Substantial modification of the urban environment to facili-

tate the movement of the physically handicapped cannot be achieved overnight. Elimination of barriers can be accomplished only as new buildings are constructed or old buildings are remodeled.

4. Local associations of handicapped persons have played primarily a supportive role in promoting the elimination of architectural barriers. Most of these associations have been formed for social and recreational rather than political purposes. In many communities, the handicapped have left promotion of barrier elimination through political means to the public and private health and welfare organizations and agencies.

NATIONAL PUBLIC OPINION POLL

A representative sample of 1,574 adults in rural and urban communities across the Nation revealed that:

75% are aware of the physical obstacles that restrict the mobility of handicapped persons in their communities.

89% are not aware of any efforts to eliminate barriers in their communities.

63% thought that more should be done in the community to overcome obstacles to the handicapped.

ARCHITECTS' LEVEL OF AWARENESS

A survey of 2,875 architects in the United States (about 10% of the total) indicates that:

60% are familiar with the terms "architectural barriers" or "barrier-free design."

65% are not familiar with the USASI Specifications for "Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped."

34% are aware of the legal requirements of their State and local governments to provide accessibility to the handicapped in public buildings.

CITY ACTION

In response to questionnaires on architectural barriers sent to 379 cities:

278 *responded.*

95 *reported efforts to remove architectural barriers:*

56 *official action.*[1]

39 *informal action.*

COUNTY ACTION

In response to questionnaires on architectural barriers sent to 272 counties:

124 *responded.*

42 *reported efforts to remove architectural barriers:*

28 *official action.*[2]

14 *informal action.*

[1] 26 jurisdictions reported legal action; 30 took administrative action.

[2] 7 jurisdictions reported legal action; 21 took administrative action.

Source: "State and Local Efforts to Eliminate Architectural Barriers to the Handicapped," National League of Cities, Department of Urban Studies, November 1967.

Comparison of the Four Major National Building Codes with the American Standards Association Specifications[1]

Over 3,500 local governmental units in the United States subscribe to one of the four major national building codes: The Southern Standard Building Code of the Southern Building Code Congress; the Uniform Building Code of the International Conference of Building Officials; the National Building Code of the American Insurance Association; or the Basic Building Code of the Building Officials Conference of America.

Generally, the codes are remedial regulations that are directed toward three areas: (1) stability and sturdiness of construction, (2) fire safety, and (3) health and sanitation. All the codes set forth standards that are specifically promulgated according to the type of occupancy for which a building is designed. Although there are minor variations among the codes on occupancy types, nine principal occupancy classifications are discernible. These are:

a. Assembly—churches, theaters, auditoriums, stadiums, libraries, museums.

b. Business—banks, markets, restaurants, department stores, office buildings.

c. Educational—schools, academies, colleges, universities.

d. Institutional—hospitals, asylums, orphanages, homes for the aged, prisons.

e. Hazardous—drycleaning shops, chemistry labs, grain elevators.

f. Industrial—manufacturing plants, factories, mills.

g. Storage—warehouses, depots, supply areas, garages, airplane hangars.

h. Residential—single and multiple dwellings, hotels, convents, dormitories, roominghouses.

i. Mixed—buildings in which two or more of the above occupancy types are found.

None of the codes have ex post facto application; their provisions do not apply retroactively to buildings constructed before the code was adopted. General provision has been made, however, for forcing compliance in previously existing buildings under these circumstances:

1. If the previously existing building is altered or repaired to an extent costing in excess of 50 percent of its value, then the building shall comply with the code.

2. If the previously existing building is altered or repaired to an extent costing between 25 and 50 percent of its value, then the building shall comply with the code in the affected parts to an extent determined by the building official.

Repairs or alterations involving less than 25 percent of the value of the building do not necessitate compliance with the code.

It is significant to note that each of the four codes has a statement of purpose pertaining to public safety, health, and general welfare that could be interpreted as adequate justification for eliminating, or minimizing the effects of, architectural barriers to the physically handicapped.

The four basic codes are only "model" codes. Very few municipalities embrace a code in toto. Administrative provisions in the codes must usually be altered to comply with State or local law. Engineering standards are usually left untouched, but the practice of altering building specifications of codes by passing local ordinances is so common that it is the rule rather than the exception. Thus, it is erroneous to think that when a locality adopts a code by ordinance that all the provisions of that code will be mandatory in that jurisdiction. The locality is free to accept or reject, by ordinance, any specifications or standards with which it does not wish to comply. On the positive side, the local government is equally free to adopt more stringent standards (such as the ASA Specifications) for inclusion in its building code.

The import of the above, for the purpose of eliminating architectural barriers, is that even if all four codes did accept inclusion of the ASA Specifications, it would not necessarily result in the application of these specifications in those jurdisdictions subscribing to the codes.

[1] The American Standards Association is now the United States of America Standards Institute.

Barrier-Free Architecture

A report to the Rehabilitation Services Administration, Department of Health, Education, and Welfare, by the American Institute of Architects, Potomac Valley Chapter, AIA, Task Force.

Foreword

Late in 1965 the Congress established the National Commission on Architectural Barriers and designated the Vocational Rehabilitation Administration, HEW, to provide staff and administration. In April 1966, the Secretary appointed the members of this Commission with Leon Chatelain, FAIA, as its chairman.

The American Institute of Architects offered to assist in the work of the Commission, and in December 1966 agreement was reached on a work prospectus and a grant in the amount of

$58,775 was made to the institute by the Vocational Rehabilitation Administration.[1]

The Potomac Valley Chapter of the Institute was designated to provide the task force to ". . . explore the reasons why the ASA Standards have not been implemented, and to explore and test one or more means for reaching the architect and others who affect building decisions with concepts and useable materials which can be translated into decisions for barrier-free architecture."

The chapter gratefully acknowledges the assistance in the performance of its task, of the many individuals and organizations working in the field; in particular, those associated with the Rehabilitation Services Administration, the National Commission on Architectural Barriers, the National Society for Crippled Children and Adults, the National Council on the Aging, and the American Institute of Architects.

Potomac Valley Chapter, AIA,
Task Force,

EDWARD H. NOAKES, AIA,
Project Director.

Committee on Architectural Barriers,

ROBERT M. DILLON, AIA, *Chairman,*
EDWIN F. BALL, AIA,
JAMES F. HILLEARY, AIA.

[1] Recently redesignated as the Rehabilitation Services Administration.

Introduction

The study upon which this report is based was undertaken with the following principal objectives in view:

- To ascertain, through a pilot study, reasons for failure by architects, building owners, and others to include provision for the handicapped in buildings.
- To devise new materials and methods of presentation to reach the architectural and building communities with a view to encouraging barrier-free architecture. To develop and test a prototype package of illustrative and/or other problem-defining and instructional materials.
- To outline a long-range program of implementation of the devised plan, and means for stimulating and conducting continued research.

In seeking these objectives, the committee entered into contract with Walter Gerson & Associates, Inc., to conduct an opinion and attitude survey among a small but representative sample of those who effect building decisions for or against barrier-free architecture in the United States; i.e., architects, those who constitute the building owner group, architectural educators, and those who finance building activity. A detailed questionnaire for use in personal interviews was developed, pilot tested, and finally employed in 54 interviews geographically and climatically distributed across the Nation.

On the basis of the pilot survey results the committee decided that two philosophical approaches to the encouragement of barrier-free architecture needed to be tested for effectiveness; namely, (*a*) designing and building for the real rather than the assumed average physical and mental characteristics of the population, and (*b*) designing and building for the "physically handicapped" with its attendant emotional appeal. This was accomplished—although in a limited way—by presenting both concepts to two assemblages of architects at regular meetings of their respective AIA chapters.

As a result of the above cited opinion on attitude survey, it was also clear that an effective design guide was needed by the architects to translate the ASA Standard and other information into an effective tool for professional office use. Beveridge Associates was retained to develop the graphic design and communications media to prepare the language of a draft of such a guide for pretesting at the AIA Convention in New York City in June 1967.

It was then decided that regular meetings of architects at regional and chapter levels presented opportunities for architect education as well as the development of a public climate within which the architect's efforts would be favorably received.

It was therefore decided that a prototype conference containing elements useable at both chapter luncheon meetings and regional meetings of the AIA, should be structured, tested and a meeting guide assembled for dissemination to all AIA chapters.

The Lobsenz Publications Co. was retained to conduct the prototype meeting and develop the meeting guide. Wilfred S. Rowe was retained to develop a sound film strip to be an integral part of the meeting. This prototype meeting was held in Washington as a meeting of the Middle Atlantic Region of the AIA, October 31, 1967.

It was then determined that the Potomac Valley Architect, the official publication of the Potomac Valley Chapter, AIA, would form an ideal vehicle for transmitting the prototype meeting guidelines to individual chapters. Some 450 copies were distributed to the three grassroots meetings of newly elected chapter presidents across the country.

Finally, the design manual in its final recommended form is intended to be distributed to every chapter for review and suggestions.

The survey, together with the conferences and additional interviews held, have enabled the committee to assess the current awareness of and attitudes toward barrier-free architecture in America, and to recommend a positive program of action for the building community with substantive support for its probable effectiveness.

What follows, then, are the committees conclusions and recommendations, and supporting discussion, together with the cited reports and materials used.

Conclusions and Recommendations

The principal findings, and therefore conclusions, of the committee are as follows:

1. There is good understanding of the concept and desirability of barrier-free architecture by architects, but not by their clients or other members of the building community.

2. There is little understanding of the true physical characteristics of the population by all members of the building community.

3. There is great need for concise instructional and reference materials—principally a guide to design—addressed to architects.

4. There is great need for encouraging client acceptance of barrier-free design, both as a matter of public responsibility and as a service to the real market, through development of a climate of concern and understanding.

Therefore, the committee recommends as follows:

1. The National Commission should encourage and recommend financial support of the finalization and implementation of educational tools and programs; in particular:

a. The prototype design guide should be reviewed for adequacy of coverage and accuracy of content, and then be printed and disseminated at least to the offices of all practicing architects and schools of architecture, and preferably to key allied professionals such as landscape architects and industrial designers, and financial, builder and building institutions and organizations as well; i.e., a total distribution of perhaps 50,000 copies.

b. Because of budget limitations, the sound filmstrip contains a large proportion of second and third generation slides of dubious quality. Further, there have been a number of suggestions regarding the script and background music. For these reasons it is recommended that a new sound filmstrip, based on the prototype, but refined considerably, be prepared and given wide distribution to architects and nonarchitects alike. Of the educational tools developed by this task force, this is the most promising and effective and it is felt every effort should be made to take advantage of its full potential.

c. Every chapter president now has a copy of the special edition of the Potomac Valley Architect. The committee felt that this would be a good first step in the effort to have every chapter put on its own meeting. It is felt however that such dependence upon local initiative would produce uneven results. It is recommended therefore, that a professional organization or individual, experienced in the ways and means of organizing such meetings and getting the best advantage from them in all regards, be available to assist chapters upon request. Such expertise could be national or local but would normally be beyond the means of the average chapter. It is funding for such activities that the task force recommends for the consideration of the National Commission.

The AIA should be considered as the vehicle for the above.

2. The National Commission should encourage and recommend support of:

a. A long-range program of research into the true physical characteristics of the population which constitutes the real market for barrier-free architecture, and a program for disseminating such information, i.e., demographic data highlighting those characteristics which are expressive of the total range of physical impairment as related to environment.

b. A long-range program of research into the kind of barrier-free design features which will best provide full use and enjoyment of the manmade physical environment; e.g., the desirable performance characteristics of space, products, and components.

Supporting Discussion

The unprecedented amount of building and rebuilding to come in the decades immediately ahead—readily projectable as being equal by the end of this century to the total of all construction now in place—provides an opportunity to make major near-term inroads on the accessibility and useability of the manmade environment and its accessories to all people.

Neither the cost nor the means are the real deterrents to realization of such a significant transition—lack of understanding is.

The committee made every effort to objectively assess the understanding of and climate for barrier-free architecture before deciding upon the best philosophical approach to achieving positive decisions for barrier-free architecture, and before devising instructional and reference materials.

Conclusions:

Specifically, the committee's conclusions are supported by the survey findings as follows:

1. There is good understanding of the concept and desirability of barrier-free architecture by architects, but not by their clients or other members of the building community.

Architects and architectural educators are aware of the concept and desirability of barrier-free design. This is demonstrated by their use of some, if not many, barrier-free design concepts and features. The Gerson survey reports 24 of 34 architects and architectural educators have incorporated at least some of the new barrier-free design concepts and features in their buildings (or into building design problems for students).

Their understanding and use of these concepts and features derives primarily from experience with a knowledge of public building programs.

Virtually all of the architects and educators surveyed disagreed with the statement which indicated that ". . . generally, there is no real need for barrier-free architecture." Most of those in the professional group believed that at least public buildings should be readily accessible to all people, or that there was need to serve those handicapped.

Both the client and financial groups interviewed on the other hand, knew and/or cared little about barrier-free design. Only five of twenty in this category had occasion to incorporate barrier-free design concepts or features in their programs. When barrier-free design concepts or features were incorporated, it was due principally to specifications or requirements prescribed by government building regulations. None of the clients saw any real need for barrier-free design.

2. There is little understanding of the true physical characteristics of the population by all members of the building community.

There are two distinct attitudes toward barrier-free architecture held by those most closely related to designing and initiating the Nation's building activity. These are:

1. A person must find it impossible, not merely difficult, to use existing buildings before he is considered to be handicapped.

2. There are simply not enough handicapped people to warrant the installation of barrier-free design concepts and features.

The general view of handicaps or infirmities by architects, educators and clients, are those having high visibility. The wheelchair, lost limb, the blind, represent those infirmities ranking high in the consciousness of the building professional. Persons having heart disease or a nervous disorder, or those who simply are of advanced age are only rarely considered to be among those who would benefit from barrier-free design.

It is important to note, however, that indications are that where persons possessing any form of handicap or infirmity reach an above average proportion of the population, or are the subject of significant community interest, barrier-free design is incorporated into building programs. The Tampa-St. Petersburg area is noted for its generally older/retirement population, and in this area there is a higher percentage of barrier-free buildings than usual.

To further indicate the lack of awareness, among building professionals, about a quarter of those responding to the survey would not even venture a guess as to the percentage of handicapped in the population.

3. There is great need for concise instructional and reference materials—principally a guide to design—addressed to architects.

The survey required all building industry respondents to focus on major problems inhibiting the development of total barrier-free design. Of three major problems cited, two related to lack

of knowledge as to *what* and *how* to design barrier-free buildings.

Lack of knowledge inherently requires education, and the respondents recognize this requirement. When queried about how architects and clients could best acquire this education, almost all agreed that dissemination of information through pamphlets and technical presentations would be the best approach. Generally, seminars ranked third in terms of effectiveness in providing the building professional with information.

4. There is great need for encouraging client acceptance of barrier-free design, both as a matter of public responsibility and as a service to the real market, through development of a climate of concern and understanding.

A major problem, as viewed by clients interviewed, is the general lack of demand in the private marketplace for barrier-free design. Most clients seriously doubt any demand for barrier-free design can be demonstrated. Clients, at present, pay little heed to what might be described as their public responsibility to provide barrier-free facilities, particularly if it serves only a few people. The vast majority have not built with the handicapped in mind, unless it served their self-interest or unless it was required by law.

The architect appears to be the logical person to suggest the inclusion of barrier-free design features to his clients. However, at least in part, the architect's efforts have minimal effect due to the lack of understanding and initiative on the part of the client.

Discussion of Recommendations:

In making its recommendations, the committee has considered both immediate and long-range needs. By recommending research into population characteristics as related to environment, it is intended that it will be possible in the future to publish data on physical characteristics by numbers of individuals and their micro- and macro-geographic distribution.

In so doing all architectural design will be improved, but, in particular, both market and public responsibility will be demonstratable for that apparently increasing part of the population which must live with physical impairments.

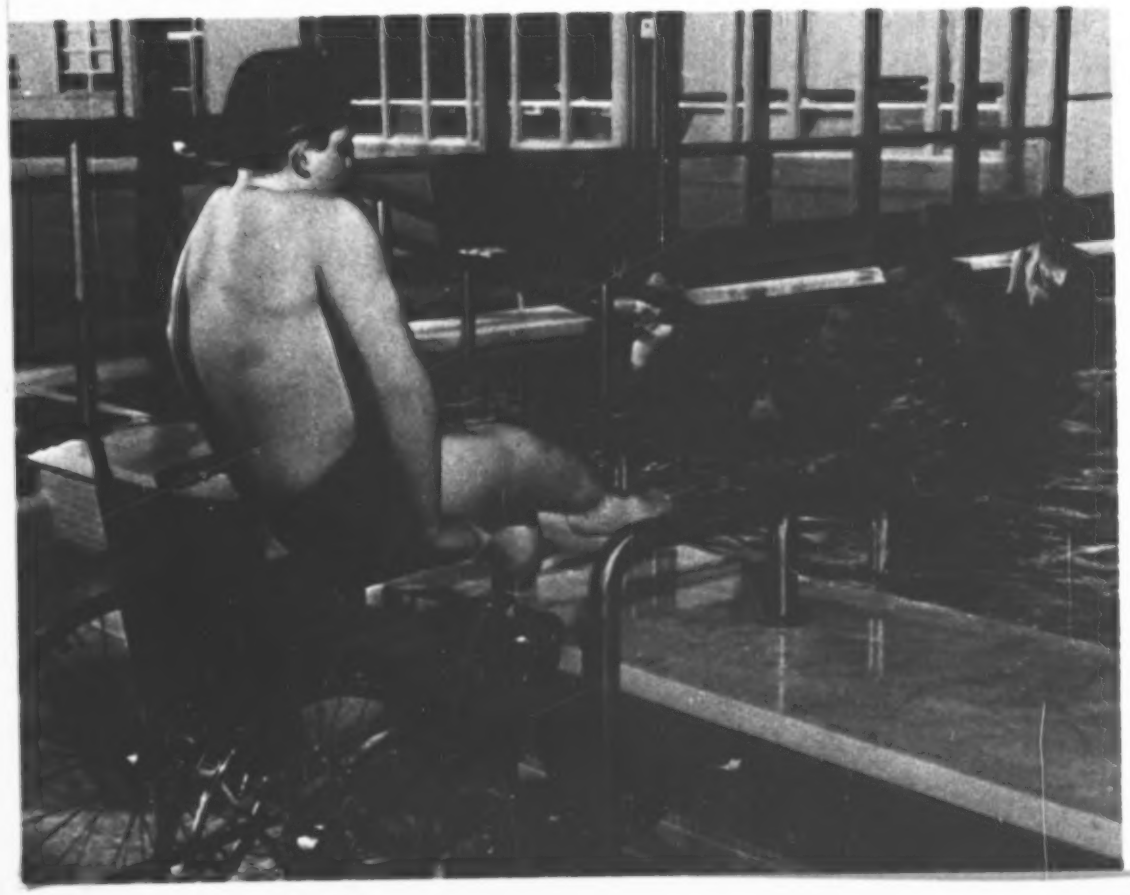
These data will also aid in the establishment of improved performance characteristics for the design of space, products and components, and the whole of buildings.

The survey revealed that the guide to design would perhaps be the most significant instructional aid, followed by conference presentations. The committee, therefore, has (or will have) experimented with both media and has recommended specific action.

In conclusion, the committee feels that a concerted near-term effort to create an awareness of the need and the materials to translate awareness into decisions for barrier-free architecture, will be effective. And, if followed by improved data and performance criteria in the years to come, the vast amount of new building and rebuilding activity which lies ahead will produce an environment that can be enjoyed by all our citizens.

A Checklist of Publications Relating to Architectural Planning for the Physically Handicapped

The publications given below are believed to be in print and available from the distributing agencies, whose addresses are included in the references. These have been selected because of their relative accessibility and their possible usefulness to those who are initiating a study of the subject. For a more systematic review of published literature, including journal articles, the reader is referred to Rehabilitation Literature, the monthly journal published by the Library of the National Society for Crippled Children and Adults.



GENERAL

AMERICAN STANDARDS INSTITUTE

American Standard specifications for making buildings and facilities accessible to, and usable by, the physically handicapped. 1961. 11 p. figs. Single copies free from the Architectural Barriers Project, National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago, Ill.

CANADA. NATIONAL RESEARCH COUNCIL

Building standards for the handicapped, 1965, by the Associate Committee on the National Building Code. 1965. 20 p. figs. (NRC No. 8333; Suppl. No. 7, Natl. Building Code of Canada) Available from: The Secretary, Associate Committee on the National Building Code, National Research Council, Ottawa, Canada.

A guide to the design and construction of buildings with provisions for making them accessible to the physically handicapped without assistance.

NATIONAL STEEL PRODUCTS COMPANY

Bathroom layouts for hospitals, homes for the aged, and related institutions, compiled by Riener C. Nielsen and Gene E. Moffatt. 1962. 35 p. illus. Offered to all architects as a public service by National Steel Products Co., 617 South La Brea Ave., Los Angeles, Calif.

Also available: *Body mechanics manual for the guidance of architects, hospital administrators, doctors, nurses, and therapists in the placement and use of Reach Grab Bars for patient maneuverability and support.* 1962. 84 p. illus. Contains designs, drawings, and descriptive text.

REHABILITATION FACILITIES

ALLAN, W. SCOTT

Rehabilitation; a community challenge. 1958. 247 p. Illus. John Wiley & Sons, 605 Third Ave., New York, N.Y. 10016.

See chapter 8, "The Rehabilitation Center," p. 45–66.

AMERICAN HOSPITAL ASSOCIATION

Physical therapy service; a guide to organization and management. 1965. 48 p. tab., form, floor plans. (Rev. ed.) American Hospital Association, 840 North Lake Shore Dr., Chicago, Ill. 60611.

AMERICAN OCCUPATIONAL THERAPY ASSOCIATION

Occupational therapy; manual on administration. 1965. 97 p. Paperbound. Spiral binding. American Occupational Therapy Association, 251 Park Ave. S., New York, N.Y. 10010.

Includes guidelines on planning physical facilities; the bibliographies and lists of pertinent materials should be useful as a resource for further study.

The rehabilitation center. 1956. 35 p. illus., floor plans. Published by the Rehabilitation Institute of Montreal and available from International Society for Rehabilitation of the Disabled, 219 East 44th St., New York, N.Y. 10017.

Pictures, diagrams, and descriptions

showing the function and construction of a modern rehabilitation center, with data on administrative and personnel aspects of operation.

SALMON, F. CUTHBERT

The blind; space needs for rehabilitation, by F. Cuthbert Salmon and Christine F. Salmon. 1964. 82 p. diags., floor plans, charts. Paperbound. Spiral binding. Office of Engineering Research, Oklahoma State University, Stillwater, Okla. 74075.

A guide to the designing of rehabilitation centers serving the blind and partially sighted, based on observations made by the project staff in visits to 14 centers and institutions.

SALMON, F. CUTHBERT, and CHRISTINE F. SALMON

Rehabilitation center planning; an architectural guide. 1959. 192 p. illus., figs., floor plans. Pennsylvania State University Press, University Press Bldg., University Park, Pa. 16802.

SALMON, F. CUTHBERT

Sheltered workshops; an architectural guide, by F. Cuthbert Salmon and Christine F. Salmon. 1966. 133 p. illus., charts, diags., floor plans. Paperbound. Office of Engineering Research, Oklahoma State University, Stillwater, Okla. 74075.

Describes the role of the sheltered workshop in the community and provides programing and planning information specific to this type of building.

UNITED NATIONS. DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS

Basic equipment for rehabilitation centers: Part I. Artificial limbs and braces. 1962. 22 p. floor plans. (ST/SOA/47).

Covers floor plans and equipment for the operation of workshops for artificial limbs and braces; floor plans were contributed by the Institute of Physical Medicine and Rehabilitation.

Also available: *Part II. Physical therapy.* 1962. 20 p. floor plans. (ST/SOA/48). Covers building requirements, architectural planning, and basic equipment; 2 floor plans are included.

Part III. Occupational therapy. 1964. 33 p. floor plans. (ST/SOA/55). Contains suggestions on planning space and equipment for occupational therapy departments; sample floor plans of departments in five different countries are included.

All may be obtained from the Rehabilitation Unit, United Nations, United Nations Bldg., New York, N.Y.

U.S. PUBLIC HEALTH SERVICE. DIVISION OF HOSPITAL AND MEDICAL FACILITIES

Compilation of studies on planning multiple disability rehabilitation facilities. 1963. 48 p. illus., floor plans. (Public Health Serv. publ. No. 930–D–6) U.S. Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. 35¢.

Adaptations of articles published earlier in *Hospitals,* Journal of the American Hospital Association. This compilation appeared previously (1960) as an unnumbered publication under the same title; the bibliography has been brought up to date in this printing.

WASHINGTON STATE DEPARTMENT OF HEALTH

Guide to planning and equipping a handicraft facility for a nursing home activity program; prepared by Evelyn M. Bengson. 1964. vi, 88 p. diags., floor plans. Paperbound. Spiral binding. Washington State Dept. of Health, Public Health Bldg., Olympia, Wash. 98501. (Address orders to: Mrs. Vera H. McCord, Coordinator, Rehabilitation Education Service Unit, Washington State Dept. of Health.

HOUSING

AMERICAN HEART ASSOCIATION

The heart of the home. 1950. 27 p. illus. Available from local Heart Associations or the American Heart Association, 44 East 23d St., New York, N.Y. 10010.

CENTRAL COMMITTEE FOR THE WELFARE OF CRIPPLES IN SWEDEN (SVCK)

The physically handicapped housewife. 1959. 68 p. illus. (SVCK's publ. ser. No. 6) Published by SVCK and distributed in the U.S. by International Society for Rehabilitation of the Disabled, 219 East 44th St., New York, N.Y. 10017.

CONNECTICUT, UNIVERSITY OF SCHOOL OF HOME ECONOMICS

Bibliography on home management, with emphasis on work simplification for handicapped homemakers, prepared by Mary C. Callender and Susan Pike Corcoran under the direction of Mary Beth Minden. 1960. 86 p. Mimeo. Paperbound. Handicapped Homemaker Research Center, University of Connecticut, Storrs, Conn. 06268.

DONAHUE, WILMA, ED.

Housing the aging; with a foreword by Everett J. Soop. 1954. 280 p. University of Michigan Press, Ann Arbor, Mich. 48106.

GOLDSMITH, SELWYN

Designing for the disabled; a manual of technical information. 1963. 236 p.

diags. Published by the Royal Institute of British Architects, Technical Information Service, and available in the U.S. from International Society for Rehabilitation of the Disabled, 219 East 44th St., New York, N.Y. 10017.

A basic reference book for architects and designers, probably the most elaborate treatment of the subject published to date. Major emphasis is on problems in the home. The general check list is valuable in planning housing alterations, to accommodate a disabled person.

ILLINOIS, UNIVERSITY OF SMALL HOMES COUNCIL

A check-list for retirement homes, by H.A. Steinberg. 1958. 12 p. illus. Small Homes Council, University of Illinois, Urbana, Ill. 61803.

INTERNATIONAL SOCIETY FOR REHABILITATION OF THE DISABLED

ISRD Conferences: "The physically disabled and their environment," Stockholm, Oct. 12–18, 1961; report of the proceedings. 1962. 208 p. illus., floor plans, tabs. Paperbound. Distributed by International Society for Rehabilitation of the Disabled, 219 East 44th St., New York, N.Y. 10017. (Also available from ISRD Technical Section, c/o SVCK, Ibsengatan 8–14. Bromma 3, Sweden.)

Contains conference discussions on architectural planning of homes for the disabled, homemaking methods, and technical aids in laundering, cooking, and clothes and their care, with additional information in appendices on house design and financing of housing.

KIRA, ALEXANDER

The bathroom; criteria for design. 1966. ix, 116 p. figs., tabs. Paperbound. (Center for Housing and Environmental Studies, Research rep. No. 7) Cornell University, Center for Housing and Environmental Studies, Ithaca, N.Y. 14850.

KIRA, ALEXANDER

Housing needs of the aged, with a guide to functional planning for the elderly and handicapped. 1960. 9 p. (Reprint from: *Rehab. Lit.,* Dec. 1960) National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago, Ill. 60612. Free on request.

Discusses types of housing needed and includes design and planning criteria for housing for the aged.

LAGING, BARBARA

Furniture design for the elderly. 1966. 11 p. (Reprint from: *Rehab. Lit.,* May, 1966) National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago, Ill. 60612. (Reprint DR–36)

LOWMAN, EDWARD W.

The helping hand; self-help devices, by Edward W. Lowman and Howard A. Rusk. (1963) 18 p. illus. Institute of Rehabilitation Medicine, 400 East 34th St., New York, N.Y. 10016.

McCULLOUGH, HELEN E.

Kitchens for Women in Wheelchairs, by Helen E. McCullough and Mary B. Farnham. 1961. 31 p. illus., plans. (Extension Serv. in Agriculture and Home Economics, circ. No. 841)

Also by the same authors: *Space and design requirements for wheelchair kitchens.* 1960. 47 p. illus., tabs., floor plans. (Bull. 661). Both bulletins are available on request to Information Office, College of Agriculture, Mumford Hall, University of Illinois, Urbana, Ill. 61803.

MATHIASEN, GENEVA AND EDWARD H. NOAKES

Planning homes for the aged. 1959. 113 p. architectural drawings. Published by F. W. Dodge Corp., and available from McGraw-Hill Book Co., 330 West 42d St., New York, N.Y. 10036, or from National Council on the Aging, Publications Office, 104 East 25th St., New York, N.Y. 10010.

MAY, ELIZABETH ECKHARDT

Homemaking for the handicapped; a resource book in home management for the physically handicapped and their families and for professional personnel concerned with rehabilitation, by Elizabeth Eckhardt May, Neva R. Waggoner, and Eleanor M. Boettke. 1966. xv, 206 p. illus., diags. Dodd, Mead & Co., 79 Madison Ave., New York, N.Y. 10016.

MUSSON, NOVERRE

Buildings for the elderly, by Noverre Musson and Helen Heusinkveld. 1963. 216 p. illus., plans. Reinhold Publishing Corp., 430 Park Ave., New York, N.Y. 10022. $15.

Authored by an architect and a member of the National Council on the Aging, this book is written mainly for architects and builders, laymen, and community leaders interested in providing adequate, satisfying housing for older people, and the elderly planning to build or resettle.

NATIONAL COUNCIL ON THE AGING

A national directory on housing for older people, including a guide for selection. 1965. 260 p. Paperbound. National Council on the Aging, Publications Office, 104 East 25th St., New York, N.Y. 10010.

NETHERLANDS CENTRAL SOCIETY FOR THE CARE OF DISABLED

Housing for the disabled. 1960. 46 p. illus., figs. Published by the Netherlands Central Society and available in an English translation from International Society for Rehabilitation of the Disabled, 219 East 44th Street, New York, N.Y. 10017.

NEW YORK UNIVERSITY MEDICAL CENTER. Institute of Physical Medicine and Rehabilitation

A functional home for easier living, designed for the physically disabled the cardiac, and the elderly, by Howard A. Rusk (and others). 1959. 12 p. illus. (Together with: Brochure on Florida Retirement Village: The Horizon Home.) Available from the Institute of Rehabilitation Medicine, 400 East 34th St., New York, N.Y. 10016.

NEW YORK UNIVERSITY MEDICAL CENTER. Institute of Physical Medicine and Rehabilitation.

A manual for training the disabled homemaker, by Howard A. Rusk (and others). 1955. 167 p. illus. (Rehab. monograph VIII) Paperbound. Rehabilitation Monographs, Institute of Physical Medicine and Rehabilitation, 400 East 34th St., New York, N.Y. 10016.

NEW YORK UNIVERSITY MEDICAL CENTER. Institute of Medicine

Planning kitchens for handicapped homemakers, by Virginia Hart Wheeler. 1965. 82 p. illus., diags., floor plans. (Rehab. monograph XXVII.) Paperbound. Spiral binding. Publications Unit, Institute of Rehabilitation Medicine, 400 East 34th St., New York, N.Y. 10016.

NEW YORK UNIVERSITY MEDICAL CENTER. Institute of Rehabilitation Medicine

Self-help devices for the arthritic, by Edward W. Lowman. 1960. 149 p. illus. (Rehab. monograph VI, rev.) Rehabilitation Monographs, Institute of Rehabilitation Medicine, 400 East 34th St., New York, N.Y. 10016.

NEW YORK UNIVERSITY MEDICAL CENTER. Institute of Rehabilitation Medicine

Self-help devices for rehabilitation. 2 parts. illus. Photo-offset. Wm. C. Brown Co., Publishers, 135 South Locust St., Dubuque, Iowa 52002. Part I (1958), Part II (1965).

PARALYZED VETERANS OF AMERICA

Wheelchair houses. 1959. 16 p. illus., floor plans. Paralyzed Veterans of America, Inc., 3636 16th St. NW., Washington, D.C. 20010. Free on request.

Also distributed by the same organization. *Housing for the chairborne.* 3 p. Mimeo. Covers general considerations in design in housing for those in wheelchairs.

READAPTATION. Dec., 1964. No. 115. Available from International Society for Rehabilitation of the Disabled, 219 East 44th St., New York, N.Y. 10017.

A special issue prepared by the French National Committee of Coordination for Rehabilitation of the Disabled in cooperation with the World Veterans Federation. Describes, and pictures in some instances, equipment and self-help devices, architectural specifications inside and outside the home.

RUSK, HOWARD A. AND EUGENE J. TAYLOR

Living with a disability. 1953. 207 p. illus. Published by Blakiston Division, McGraw-Hill Book Co., and available from International Society for Rehabilitation of the Disabled, 219 East 44th St., New York, N.Y. 10017.

U.S. PRESIDENT'S COUNCIL ON AGING

Homes for the aged in Sweden offer ideas for Americans. 1963. (32 p. illus. U.S. Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

WINSTON, JACK A.

Concepts of residential care; an architectural guide. 1960. 49 p. illus. United Cerebral Palsy Associations of New York State, 220 West 42d St., New York, N.Y. 10036.

SCHOOLS

BRYANT, DANIEL C.

Designing for the mentally handicapped. 1964. 3 p. (Reprint from: *Rehab. Lit.,* Nov., 1964) National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago, Ill. 60612.

Design elements to be considered in planning a school or training center for the mentally retarded, specifically those planned into the Shore School and Training Center in Evanston, Ill., a total training and vocational adjustment center opened in 1962.

CONNECTICUT, STATE DEPARTMENT OF EDUCATION

Plan for me. 1955. 15 p. illus. (Bull. No. 63) Connecticut State Dept. of Education, 600 Asylum St., Hartford, Conn. 06115.

HATHAWAY, WINIFRED

Education and health of the partially seeing child; revised by Franklin M. Foote, Dorothy Bryan, and Helen Gibbons. 1959. 201 p. illus., tabs. (4th ed.) Published for the National Society for the Prevention of Blindness by Columbia University Press, 2960 Broadway, New York, N.Y. 10027.

Chapters 11, 12, and appendix 2 include discussions of physical features of the special classroom, its equipment and facilities.

SCHOENBOHM, WILCO B.

Planning and operating facilities for crippled children. 1962. 311 p. illus., figs., floor plans, diags. Charles C. Thomas, Publisher, 301 East Lawrence Ave., Springfield, Ill. 62703.

U.S. OFFICE OF EDUCATION

School housing for physically handicapped children, by Romaine P. Mackie. 1951. 26 p. illus. (Bull. 1951, No. 17) U.S. Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

RECREATIONAL FACILITIES

ATHLETIC INSTITUTE

Planning areas and facilities for health, physical education, and recreation, by participants in National Facilities Conference. Rev. 1965. viii, 272 p. figs., tabs. Paperbound. The Athletic Institute, Merchandise Mart, Chicago, Ill. 60654.

UNITED CHURCH PRESS

Site selection and development; camps, conferences, retreats. 1965. 174 p. illus., diags., floor plans. Paperbound. Spiral binding. United Church Press, 1505 Race St., Philadelphia, Pa. 19102.

Selected References on Architectural Planning

NATIONAL COMMISSION ON ARCHITECTURAL BARRIERS

Selected References on Architectural Planning

NATIONAL COMMISSION ON ARCHITECTURAL BARRIERS

AMERICAN INSTITUTE OF ARCHITECTS—Potomac Valley Chapter, Committee on Architectural Barriers

Barrier-Free Architecture, 1968 illus.

Report of a task force. Assignment: to explore and test means of reaching architects (and others who influence building decisions), with concepts and useable materials which can be translated into decisions for barrier-free architecture.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE—OFFICE OF EDUCATION

A Directory: Some Colleges and Universities with Special Facilities to Accommodate Handicapped Students, 1967. 10 p., compiled by Robert E. Hall and Eileen F. Lehman.

A guide for handicapped students in selecting a school of higher education.

DEPARTMENT OF INTERIOR, BUREAU OF OUTDOOR RECREATION

Outdoor Recreation Planning for the Handicapped, 1967. 34 p. illus. For sale by Supt. of Documents, U.S. Govt. Printing Office, Washington D.C. 20402.

Prepared in coopertion with the National Recreation and Park Association, this technical assistance pamphlet is designed to provide helpful practical information to planners, administrators and other interested individuals.

KANSAS. KANSAS STATE TEACHERS COLLEGE

Higher Education and Handicapped Students—A Administrative Handbook, edited by William V. Tucker, M.S.; Project Director Harry J. Waters, Ed. D., 1964, 91 p., illus.

A guide for university personnel in developing plans and procedures for accommodating handicapped college students.

A survey of special facilities at schools of higher education throughout the nation.

NATIONAL LEAGUE OF CITIES, DEPARTMENT OF URBAN STUDIES, WASHINGTON, D.C.

State and Local Efforts to Eliminate Architectural Barriers to the Handicapped, 1967. 162 p., illus., by Madelene Baker, Michael A. Fischetti, Lawrence A. Williams, Eddie M. Young.

STATE OF NEW YORK, DEPARTMENT OF CONSERVATION, STATE COUNCIL OF PARKS AND OUTDOOR RECREATION, ALBANY, N.Y.

Outdoor Recreation for the Physically Handicapped—A Handbook of Design Standards, 1967. 16 p., illus.

Contains helpful information for planners and administrators concerned with the services for disabled children and adults.

THE WOODROW WILSON REHABILITATION CENTER FOUNDATION

A Report on the Development of An Activities Building for the Woodrow Wilson Rehabilitation Center, Fisherville, Va., 1967. 22 p., illus.

Presents specifications and floor plans for an activities building designed to provide areas for a variety of social and recreational activities.

UNITED STATES SENATE, COMMITTEE ON PUBLIC WORKS, WASHINGTON, D.C.

Accessibility of Public Buildings to the Physically Handicapped, Hearings, 90th Congress, first session on S–222—"A Bill To Insure That Public Buildings Financed with Federal Funds Are So Designed and Constructed As To Be Accessible to the Physically Handicapped", July 1967. 96 p., charts, tables.

MINNESOTA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, MINNEAPOLIS, MINN.

"Sound The Trumpets"—A 22-minute color film which depicts how everyday thoughtlessness in building construction affects millions of handicapped and aged, as well as non-handicapped persons. It emphasizes how sensible planning and construction can bring savings and benefit to the community and its citizens in everything from increased church attendance and retail sales to

lowered welfare costs and building insurance and maintenance costs.

DANTONA, ROBERT

Architectural barriers for the handicapped; a survey of the law in the United States, by Robert Dantona and Benjamin Tessler. 1967. 10 p. (Reprinted from: *Rehab. Lit.,* Feb. 1967.) Available free from National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago, Ill. 60612.

FEDERATION INTERNATIONALE DES MUTILES ET INVALIDES DU TRAVAIL ET DES INVALIDES CIVILS

Gli invalidi e le barriere architettoniche, by . . . with the cooperation of the Italian National Association of Disabled Workers and the Italian Association for Assistance to the Spastics. 1966. 408 p. Paperbound. Published by ANMIL (Italian Natl. Assn. of Disabled Workers), Palazzo della Civilta de Lavoro, Quadrato della Concordia (EUR), Rome, Italy. For availability of the report, write to International Society for Rehabilitation of the Disabled, 219 East 44th St., New York, N.Y. 10017.

HOFSTRA UNIVERSITY

The development and effects of an inexpensive elevator for eliminating architectural barriers in public buildings, prepared by Harold E. Yuker, Alfred Cohn, and Martin A. Feldman. 1966. 112 p. illus. Paperbound. (VRA Demonstration Grant No. RD–1651–G) Distributed by Hofstra University, Program for Higher Education of the Disabled, Hempstead, Long Island, N.Y. 11550.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

Proceedings of the National Institute on Making Buildings and Facilities Accessible To and Usable By the Physically Handicapped; a national institute on architectural barriers, sponsored by the . . . Nov. 21–24, 1965, Chicago, Ill. (1966) 86 p. Spiral binding. Distributed free by the Architectural Barriers Project of the National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago. Ill. 60612.

Papers covered such subjects as the problems and progress in elimination of architectural barriers and the prevention of barriers through design.

NEW YORK STATE UNIVERSITY CONSTRUCTION FUND

Making facilities accessible to the physically handicapped; performance criteria. 1967. 40 p. illus., diags. State University Construction Fund, 194 Washington Ave., Albany, N.Y. 12210.

NUGENT, TIMOTHY J.

Design of buildings to permit their use by the physically handicapped. (1960) (16) p. illus. (Reprinted from *New Building Research,* Fall, 1960; Publ. 910, Building Research Institute, Natl. Academy of Sciences-Natl. Research Council) Distributed free of charge by the National Society for Crippled Children and Adults, 2023 W. Ogden Ave., Chicago, Ill. 60612, or by the President's Committee on Employment of the Handicapped, 7131 Dept. of Labor Bldg. Washington, D.C. 20210.

REHABILITATION RECORD. Nov.–Dec. 1966. 76 :11–25. Single copies of this publication are available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

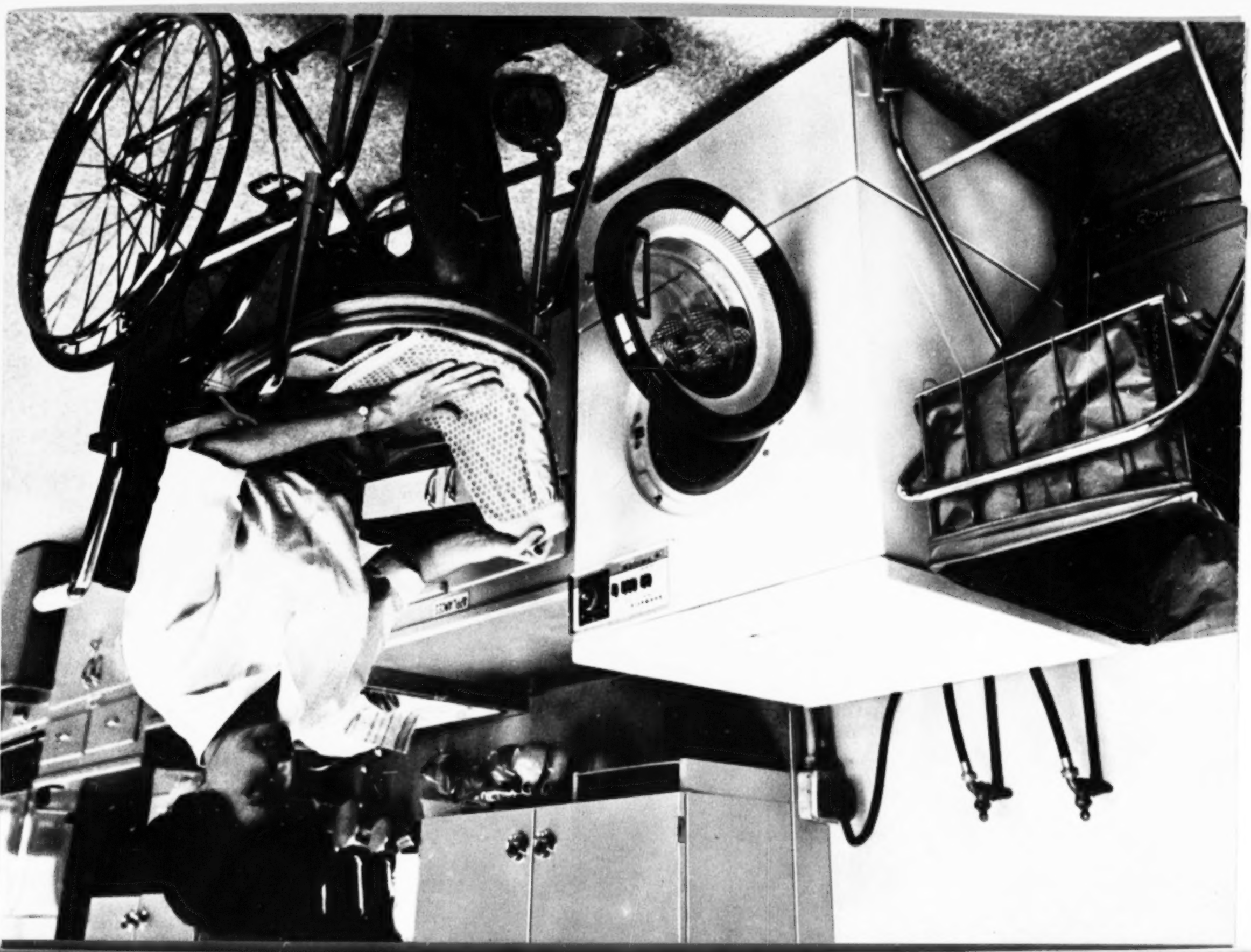
A special section of this issue, titled "Accent on Access," contains brief papers pertaining to architectural barriers and some results of research efforts to overcome them.

U.S. PRESIDENT'S COMMITTEE ON EMPLOYMENT OF THE HANDICAPPED

Guide to the national parks and monuments for handicapped tourists. 1966. x, 81 p. illus. Distributed by the President's Committee on Employment of the Handicapped, 7131 Dept. of Labor Bldg., Washington, D.C. 20210.

Intended as an aid in planning trips, the guide contains information obtained from a questionnaire survey of more than 200 units of the National Park Service.

U.S. PUBLIC HEALTH SERVICE. DIVISION OF HOSPITAL AND MEDICAL FACILITIES

Design of facilities for the mentally retarded; diagnosis and evaluation, education and training, living units. 1966. vi, 46 p. illus., tabs., floor plans. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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